

# MANUFACTURERS' RECORD

A Weekly

Southern Industrial and Hardware

Newspaper.

VOL. XII. No. 2.  
WEEKLY.

BALTIMORE, AUGUST 20, 1887.

\$3.00 A YEAR.  
SINGLE COPIES, 10 CENTS.

Sole Manufacturers of  
**EUREKA PACKING**

**JAS. SMITH & CO.**

Dealers in

**MANUFACTURERS', MILL and ENGINEERS' SUPPLIES**

Steam, Hydraulic and Locomotive Packing,  
OF EVERY DESCRIPTION.

Works, 413 to 421 Race St., Cor. of Crown.

Office & Store, 137 Market St., Philadelphia.

OF EVERY DESCRIPTION.

Send for Prices.

CIRCULARS AND PRICE-LISTS MAILED UPON APPLICATION



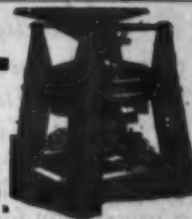
## Milling Outfits for Flour and Meal.

WE MAKE ROLLS AND PORTABLE MILLS COMPLETE.

Manufactory Established in 1851.

Pamphlets with Prices Mailed Free.

**NORDYKE & MARMON CO., INDIANAPOLIS, IND.**



## ELEVATORS

Send for Illustrated Circulars.

MORSE ELEVATOR WORKS.

**MORSE, WILLIAMS & CO.** Successors to CLEW & MORSE

Manufacturers and Builders of HYDRAULIC STEAM  
BELT and Hand-Power, PASSENGER and FREIGHT

**ELEVATORS**

With most approved Safety Devices.

Office: 411 CHERRY STREET.

Works: FRANKFORD AVE., WILDEY & SHACKANAXON STS.

Branch Office, 108 Liberty Street, NEW YORK.

**NOTICE TO  
Engineers, \* Contractors,  
— MINING MEN, —**

**AND OTHERS INTERESTED IN  
Tunneling, Shaft-Sinking, Etc.**

**Engineers' Tables of Progress**  
With Maps, Illustrations, and Full Description of the  
**New Croton Aqueduct Tunnel**

**NEW YORK.** Size 16x16 feet; length 36 miles.

Third Edition now Ready. Sent free on Application.

**INGERSOLL ROCK DRILL CO., 10 Park Place, New York.**



## The "GORTON" Boiler.

"PERFECTION IN HOUSE HEATING BY STEAM."

The GORTON BOILER is a Wrought Iron Sectional Tubular Independent Steam Boiler, and needs no brick work in setting. The GORTON BOILER is made of Best Refined Iron and Steel. Can be used as Self-Feeding or Surface-Burning. It has been two seasons before the public, and received the highest praise of "Press, Architects, Builders and Physicians." The "GORTON" House Heater burns either Hard or Soft Coal. Send for Illustrated Circular.

**GORTON & LIDGERWOOD CO.,**

Sole Manufacturers,  
96 LIBERTY STREET, NEW YORK.



**Thomas K. Carey & Co.**

21 S. CHARLES STREET, BALTIMORE.

Write for New Machinery Catalogue.

LEATHER AND RUBBER BELTING,  
Cotton and Woolen Mill Supplies,  
LATHES, PLANERS, DRILLS,  
Engines, Shapers, Gear Cutters, &c.



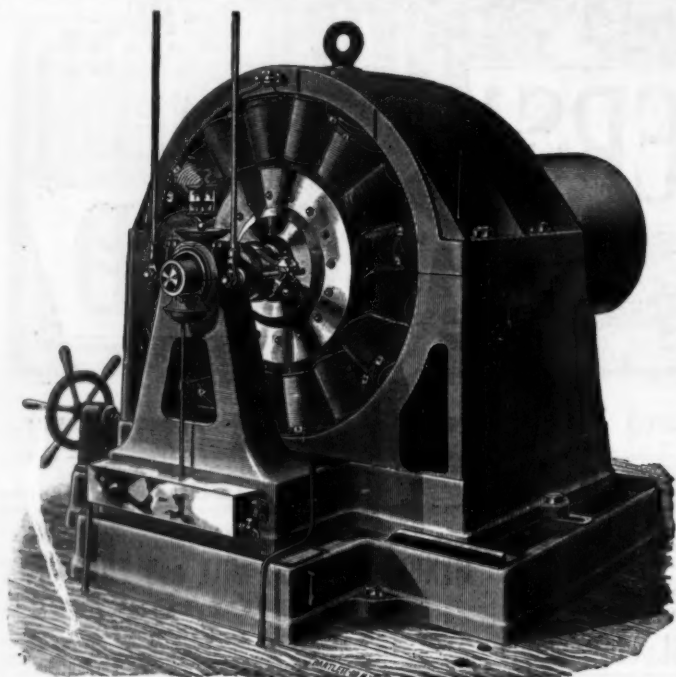
**THE MEDART PATENT  
WROUGHT \* RIM \* PULLEY.**

OVER 300,000 NOW IN USE. THE LIGHTEST, STRONGEST, BEST BALANCED and CHEAPEST in the WORLD.

**Shafting, Hangers, Couplings, &c.**

**MEDART PATENT PULLEY CO.,** 1206 TO 1214 N. MAIN STREET, ST. LOUIS, MO.  
Stores: 99 to 101 W. Second St., Cincinnati. 21 & 23 S. Canal St., Chicago

**FRANK W. SWETT, MANUFACTURER OF BAND SAWS, 60 SOUTH CANAL ST. CHICAGO, ILL. EVERY BLADE WARRANTED.**

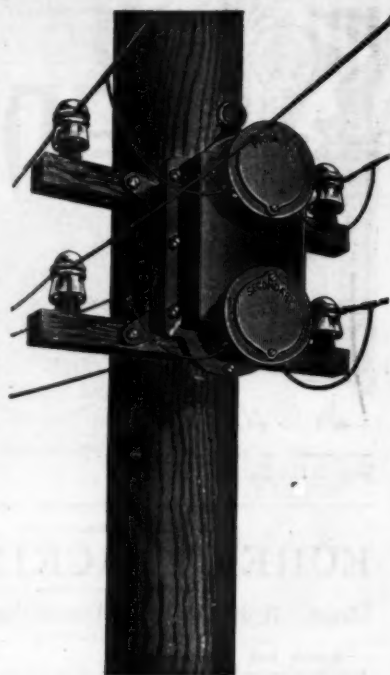


## THE ALTERNATING SYSTEM.

INCANDESCENT Electric  
Lighting from Central Stations  
made Universal, Economical  
and Profitable, irrespective  
of distance.

**The Westinghouse Electric Co.**  
**Pittsburgh, Pa.**

Eastern Office, 16 Cortlandt St., N. Y.



*The distribution of high tension alternating currents and their reconversion to low tension currents for incandescent lighting and running of motors, is broadly covered by patents owned by this Company.*

The unauthorized offer of apparatus of this character by other companies is an infringement of our patent rights.

Notwithstanding the ownership of the exclusive right to furnish this system, THE WESTINGHOUSE ELECTRIC COMPANY proposes to sell its apparatus on such terms and for such low prices that no intending purchaser or user can afford to entertain a proposition for alternating current apparatus from others at any price, with the attendant risk following the infringement of its rights.

This is the only method of electrical distribution avoiding complicated wiring, feeders, feeder regulators and numerous other details that have prevented commercial success heretofore, and the only system that can displace gas.

**This system costs much less than any other to install. It gives more light per horse power or per pound of coal consumed. It requires less copper for mains. There is less risk of fire. It costs less to operate and the station may be located on inexpensive ground with reference to cheap fuel.**

**The largest and most complete manufactory of electric lighting machinery in the country.**

**The most efficient and durable lamps in the market.**

**Mechanically the most perfect electrical machinery ever produced.**

The workmanship and materials of all apparatus supplied are of the best. The prices are based upon production in large quantities by means of special tools and machinery; and the elimination of all extraneous charges, such as commissions, stock considerations, and onerous conditions exacted by other companies, and which have placed many of their customers in such a position that improvements offered by others cannot be availed of.

No licensee is bound by contract to purchase longer from THE WESTINGHOUSE ELECTRIC COMPANY than the merits of its apparatus fully justifies.

← **TEN 50 VOLT, 16 C. P. LAMPS, PER HORSE POWER, GUARANTEED.** →

### NOTICE.

The United States Electric Lighting Company having notified us that they are engaged in the manufacture of alternating current induction apparatus in spite of the above notice of our patented rights, all persons are hereby warned that our patents not only cover the above system of distribution and conversion, but also many important details of construction, and that it is our intention to enforce our rights against all persons using the same, whether the apparatus is made by the United States Electric Lighting Company or some other manufacturer. The advantage of purchasing alternating apparatus from us are not only the low cost, efficiency, simplicity and durability of our apparatus, but also that we own the foundation patents, and no person purchasing from us is liable to be sued for infringement of any other patents. On the other hand, the purchase of such machinery from any other manufacturer will render the purchaser liable to suit for damages, profits and injunction under our patents. Copies of correspondence between the United States Electric Lighting Company and ourselves in relation to the above matter can be obtained from us upon application.

## THE FUEL-GAS & ELECTRIC ENGINEERING CO., LIMITED,

Hamilton Building, Pittsburgh, Pa.

Eastern Office, 16 Cortlandt St., New York,

Has acquired the numerous inventions which have rendered the distribution of natural gas safe and profitable, and it has a process and apparatus now being protected by a series of patents for manufacturing a cheap fuel-gas, which meets all the requirements and will displace the use of coal for domestic purposes.

THE FUEL-GAS AND ELECTRIC ENGINEERING COMPANY, LIMITED, operating in conjunction with The Westinghouse Electric Company and the Standard Underground Cable Company, proposes to make electric lighting profitable to gas companies, by enabling them to use a part or the whole of their existing gas plants for the manufacture and distribution of fuel-gas, thus promoting a new and profitable business instead of rendering valueless large investments that have already been made in illuminating gas plants.

## THE STANDARD UNDERGROUND CABLE COMPANY,

HAMILTON BUILDING, PITTSBURGH, PA.

Eastern Office, 16 Cortlandt Street, New York.

Western Office, 139 E. Madison Street, Chicago.

MANUFACTURERS OF

**ANTI-INDUCTION, BUNCHED and COMPOUND CABLES, and INSULATED WIRE of all descriptions.**

**UNDERGROUND, SUBMARINE AND AERIAL, FOR ELECTRIC LIGHT AND POWER, TELEGRAPH AND TELEPHONE.**

**WARRANTED FOR EITHER HIGH OR LOW TENSION CURRENTS.**

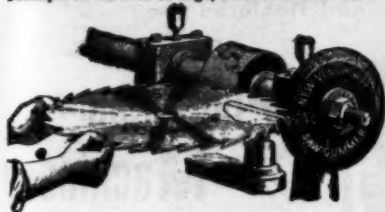


# VULCANIZED RUBBER BELTING, PACKING, HOSE.

THE OLDEST AND LARGEST

Rubber Belting with Smooth Metallic Rubber Surface.

This company has manufactured the largest Belts made in the world for the Principal elevators at Chicago, Buffalo and New York.



**VULCANITE**  
EMERY

**Saw Gummer**  
DOES NOT  
CASE HARDEN.

DURABLE,  
SAFE AND STRONG.



**New York Belting and Packing Co.**

J. H. CHEEVER, Treas.

PERRIN & Co., Hamburg.

Sole Mfrs., 15 PARK ROW, NEW YORK.

MANUFACTURERS IN THE U. S.

**Steam and Water Hose.**

**RUBBER "TEST" HOSE**, made of Vulcanized Pure Rubber and Carbolized Duck.

Cotton "CABLE" HOSE. Circular, Woven, Seamless, Antiseptic, for the use of Steam and Hand Fire Engines, Force Pumps, Mills, Factories, Steamers and Brewers' use.

Patent Elastic Rubber Back Square Packing

Rubber Matting, Mats, Stair Treads, etc., for Halls, Flooring, Stairs and Iron Stairways, etc.



## BOILER and PIPE COVERINGS.



ABSOLUTELY  
**FIRE PROOF,**  
Light and Cheap.  
**EASY TO APPLY.**

**ASBESTOS**

MINERS and MANUFACTURERS,  
BRAIDED PACKING, MILL BOARD,  
SHEATHING and SPECIALTIES.

**CHALMERS-SPENCE CO., 419-425 Eighth Street, New York.**

34 S. Second Street, PHILA.  
131 First Ave., Pittsburgh, Pa. 19 Pearl St., Boston, Mass. 144 & 146 Lake St., Chicago, Ill.

## ADAMANTINE SHOES and DIES



For Stamp Mills.

Recent improvements in material used and manner of casting have resulted in producing an article that will outwear from three to six of the ordinary iron goods. Also a Shoe and Die that will not "cup" or break at the shank. Send for Illustrated Circular. When ordering send rough sketch with dimensions.

S. H. KOHN, Pres.  
C. P. HAUGHIAN, V. Pres.

**CHROME STEEL WORKS,**

**BROOKLYN, N. Y.**



## WILLIAM TAYLOR & SONS,

COLUMBIAN IRON WORKS,

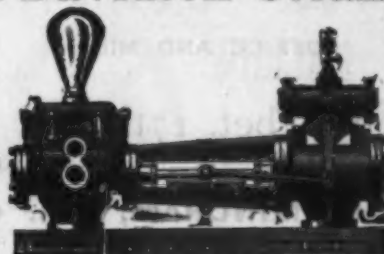
23 to 39 Adams Street, BROOKLYN, N. Y.

## Oil Works Machinery,

MANUFACTURERS OF  
HYDROSTATIC PRESSES and GENERAL MACHINERY,  
Engines, Boilers, Castings, and Machine Making.

## THE M. T. Davidson Steam Pump.

Simple,  
EFFICIENT,  
Reliable,  
FOR ALL  
PURPOSES  
AND  
DUTIES.



MADE IN  
ALL SIZES,  
WATER  
SINGLE OR  
Duplex.  
ALSO  
COMPOUND  
Pumping  
ENGINES.

DAVIDSON STEAM PUMP CO., 77 Liberty St., NEW YORK.

## SACO WATER-POWER MACHINE SHOP,

BIDDEFORD, MAINE,

Manufacturers of

## COTTON \* MACHINERY

OF THE MOST IMPROVED PATTERNS.

## CARDS,

Cylinders, 36x36 and 36x30, with 20 tops and Self-Strippers and Railway Troughs. Union Cards, with workers, strippers and tops.

## FINISHER RAILWAY HEADS.

DRAWING FRAMES, ANY LENGTH, WITH 3, 4 AND 5 LINES OF STEEL ROLLERS.

English Slubbers and Fly Frames, With Long or Short Bolsters.

BOBBINS—12x6, 11x5½, 10x5, 9x4½, 8x4, 7x3½, 6x3, and 5x2½.

RING SPINNING FRAMES, 2, 1½, 1¼ AND 1½ INCH RINGS.

## TWISTERS.

SELF-ACTING MULES, Parr, Sharp and Roberts' and Higgins' Pattern,

1½, 1 5-16, and 1¼-inch Gauge.

S. W. RICHARDSON, Treasurer,

No. 1 Simmons Building, Boston.

JAS. H. McMULLAN, Agent,

Biddeford, Maine.

ROBERT JEMISON, Pres.

A. K. SHEPARD, JR., Sec. &amp; Treas.

JNO. C. BRAIN, Vice-Prest. &amp; Man.

# Birmingham Cement Mfg. Co.

CAPITAL STOCK \$100,000.

MANUFACTURERS OF

## Brain's Portland Cement

AND

## PULVERIZED IRON SLAG,

For Potteries and Fire-Proof Purposes.

OFFICE AND MILL:

First Avenue, bet. 17th and 18th Sts.

• BIRMINGHAM, ALA. •

## THE RICHMOND

# Fire Alarm, Police and Patrol TELEGRAPH SYSTEMS.

Adopted by the Most Progressive Cities in the United States.

MANUFACTURED BY

## THE RICHMOND FIRE ALARM CO.

Correspondence Solicited. RICHMOND, IND. Send for Catalogue.

## Kaestner Patent Friction Clutches

A Perfect Friction Clutch,

SIMPLE and DURABLE.

Has largest friction surface and most perfect toggle and levers. Can be attached to Pulleys, Gears, Sprocket Wheels, or used for Shaft Couplings. 30 sizes, from 5 to 1,000 horse power. Will run at any speed, and is specially designed for running Electric Dynamos.

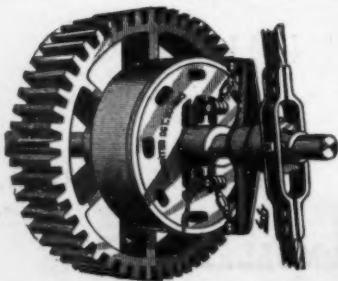
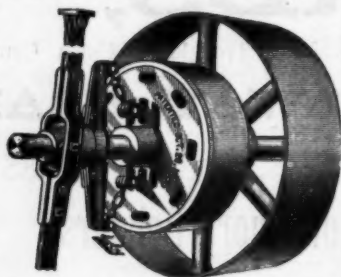
CHAS. KAESTNER &amp; CO.

—Sole Builders,—

MACHINISTS and FOUNDERS

And Builders of  
General and Special Machinery,303 to 311 S. Canal St.  
CHICAGO, ILL.

In ordering Clutches, state size and speed of shaft and power wanted. We desire specially to place them on trial where all other Clutches have failed to please. We build them singly and in pairs, and furnish the Clutches, or Pulleys and Gears with Clutches attached. Write for catalogue and prices. Mention this paper.



## Chickasaw Iron Works.

JOHN E. RANDLE &amp; CO.

98 SECOND STREET, MEMPHIS, TENN.

Manufacturers and Dealers in

GENERAL

## Plantation Machinery

WE MAKE THE

AJAX

Albertson  
and  
Brooks

Cotton Presses

Both Steam and Horse Power.

GENERAL AGENTS FOR

Atlas Engines and Boilers,

Saw Mills, Corn Mills,

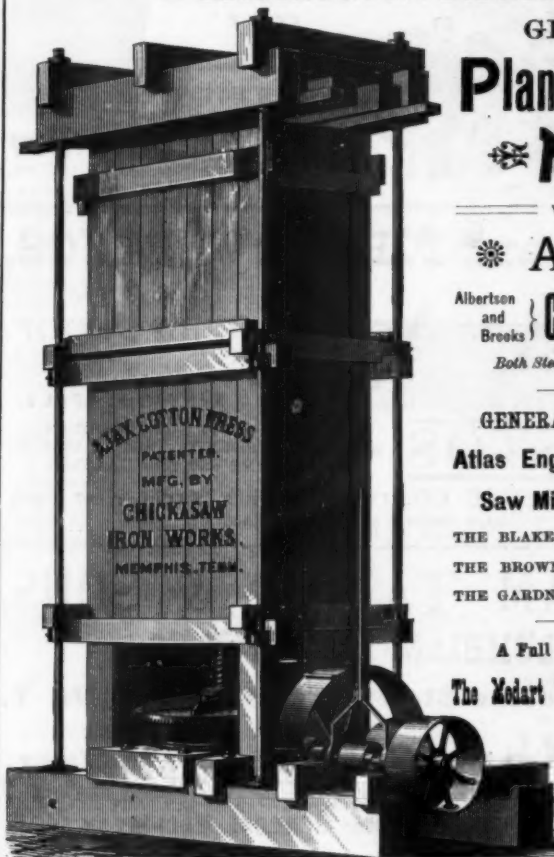
THE BLAKE STEAM PUMPS,

THE BROWN COTTON GINS, AND

THE GARDNER GOVERNOR CO.

A Full Line of Shafting.

The Modern Wrought Rim Pulleys.

Steam Pipe, Brass Goods  
Machinery Supplies.Write for Catalogue and  
Prices, and mention MAN-  
UFACTURERS' RECORD.

## F. W. DEVOE & CO.

(ESTABLISHED 1852.)

OFFICES: Fulton Street, Corner William,

NEW YORK.

## PURE MIXED PAINTS.

If you think of doing any painting this spring, we wish to call your attention to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil, and the most permanent pigments. They are not

"Chemical," "Rubber," "Patent," or "Fire-Proof."

We use no secret or patent method in manufacturing them, by which benzine and water are made to serve the purpose of pure linseed oil.

Samples of Fifty Desirable Shades for consumers on request.

## Elastic ROOF Paint,

A special paint for roofs, which remains elastic, and will not chip or peel off.

## Fine Varnishes, Artists' Materials,

PAINTERS' SUPPLIES OF ALL KINDS,

Mathematical Instruments and Engineers' Goods.

Catalogues of our different departments to responsible parties.

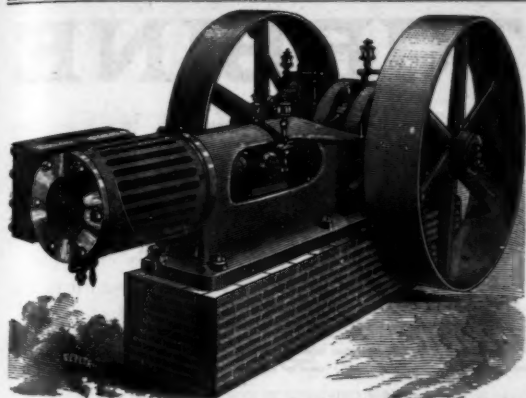
Cor. Fulton and William Sts.

NEW YORK.

COFFIN, DEVOE &amp; CO.

176 Randolph Street, CHICAGO.





This Pattern of  
**The Payne Automatic  
ENGINE**

Is conceded to be the most  
reliable and economical  
**FOR ELECTRIC  
LIGHTING**  
EVER DESIGNED.

A full line of Verti-  
cal, Portable and Sta-  
tionary Engines and  
Boilers always in  
stock.

It will pay you to correspond with us before buying.

**B. W. PAYNE & SONS**

BOX 1018. **ELMIRA, N. Y.**  
107 Liberty St., New York. 10 S. Canal St., Chicago. Baltimore—Morton, Reed & Co.

**BALL ENGINE CO.  
ERIE, PA.  
AUTOMATIC  
CUT-OFF ENGINE**

The Most Perfect governing ever  
obtained.



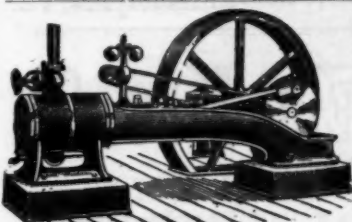
Embodying a  
new system of  
**ABSOLUTE  
REGULATION**

against change  
of load and boiler pressure.

**WE CHALLENGE THE WORLD**

on good regulation. Only Engine which Absolutely Holds to  
constant speed under all changes of load. An indispensable  
feature. Send for Circular L.

R. C. WRIGHT, Sales Agent, Birmingham, Ala.



**WRIGHT & ADAMS CO.**

QUINCY, ILL.

BUILDERS OF

**Automatic Cut-Off  
ENGINES**

Double Drum Derrick Engines. Single Drum  
Reversing Engines, suitable for Mines  
and Rapid Hoisting.

Catalogue sent on application.

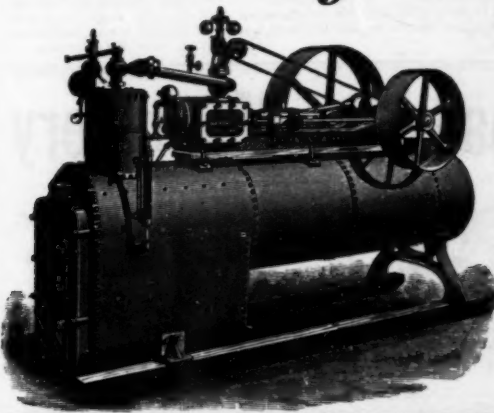
**Erie Engine Works.**

Cleveland & Hardwick,  
ERIE, PA., U. S. A.

Stationary,  
Detached,  
Portable,  
Semi-Portable,  
Agricultural,

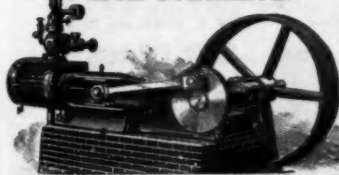
Portable,  
Stationary,  
Vertical,

Send or Catalogue and Prices.



**Chandler & Taylor's STEAM ENGINES**

Self-Contained.

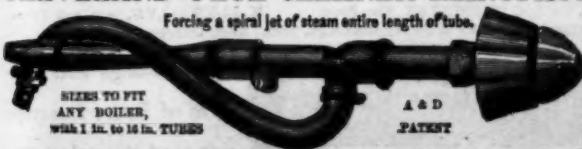


Are Strong, Well-Built and Serviceable.  
Are designed for Heavy and Continuous  
Work.  
May be run at High Speed when desired,  
performing the duties of High Grade  
Engines.

And are sold at the prices of ordinary  
Engines.  
For Prices and Descriptive Circulars, address  
**CHANDLER & TAYLOR**  
INDIANAPOLIS, IND.

**CLEVELAND FLUE-CLEANER MANUFACTURING CO.**

Forcing a spiral jet of steam entire length of tube.



SIZES TO FIT  
ANY BOILER,  
with 1 in. to 16 in. TUBES

A & D  
PATENT

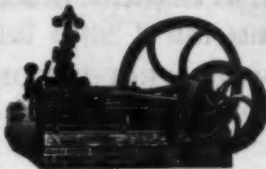
The old reliable and  
most economical cleaner  
in the market. It  
has no equal. Satisfac-  
tion Guaranteed. Lib-  
eral Discount to Deal-  
ers. Send for Circular  
and Price List of  
Cleaner and Hose.

46 Power Block CLEVELAND OHIO.

FOR THE LOWEST-PRICED FIRST-CLASS  
**Engines & Boilers**

ADDRESS

**GEO. W. TIFFT, SONS & CO.**  
Buffalo, N. Y.



5 to 500 H. P. Special stock sizes 5 to 50 H. P., both Sta-  
tionary and Semi-Portable.

CORRESPONDENCE SOLICITED.

Mention this Paper.

**SKINNER ENGINE CO. Erie, Pa.**

Awarded THREE GOLD MEDALS  
by the World's Industrial and Cot-  
ton Centennial Exposition of New  
Orleans, La.

More than 2000 in Use.

Manufacturers of Portable and Stationary Engines and Boilers,  
including the well known Skinner Portable return flue boiler.  
Send for **ILLUSTRATED CATALOGUE AND PRICES**



**HAMILTON WORKS.**

**WILLIAM TOD & CO.**

YOUNGSTOWN, OHIO,

SOLE BUILDERS OF THE

**PORTER-HAMILTON ENGINE**

50 to 500 Horse-Power. Modern design. PLAIN, STRONG, EFFECTIVE, ECONOMICAL.  
COSTS LESS THAN ANY OTHER FIRST-CLASS ENGINE. Send for Photograph.

**BLAST FURNACE ENGINES ON HAND.**

ALSO A STOCK OF OTHER ENGINES (our make.) Prices and description on application.

**McIntosh, Sevmour & Co., Auburn, N. Y.**

**Automatic Cut-off Engines**

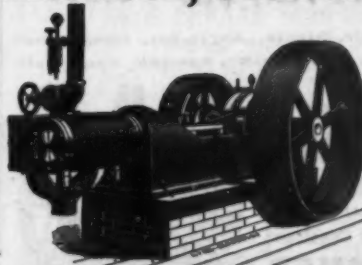
5 to 300 Horse Power.

Economy in Fuel Consumption,  
Close Regulation,  
Great Durability and Simplicity,  
Perfect Workmanship and Design.

Unrivalled in these qualities, our engines are suit-  
able for all purposes, especially where high speed and  
difficult service are required, as in electric-light plants,  
rolling mills, etc. Send for Illustrated Catalogue.

SELLING AGENTS

Young & Thomas, 45 Cortlandt St., New York City.  
Harlan Page, 143 & 145 N. 2d St., Philadelphia, Pa.  
Geo. A. Smith, 1459 Main St., Richmond, Va.



**BOILERS** MAHONING BOILER WORKS  
ESTABLISHED 1863  
PIPES, STACKS, BEAMS, ROOF TRUSSES  
BLAST FURNACES & ROLLING MILL WORK  
WM. B. POLLOCK & CO. YOUNGSTOWN, OHIO

**JARVIS PATENT FURNACE**

**FOR SETTING STEAM BOILERS.**

Economy of Fuel, with increased capacity of Steam  
Power. Like the Siemens Process of Making  
Steel, it utilizes the waste gases with hot air on top of  
the fire. Will burn all kinds of waste fuel without a  
blast, including Slack Coal, Sawdust, Logwood Chips,  
&c. Send for Circulars.

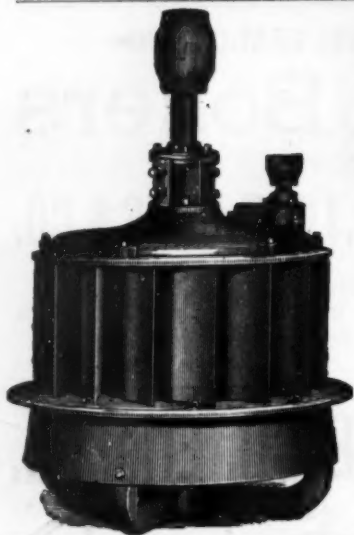
**Jarvis Engineering Co.,**

A. F. UPTON, Treas. and Gen'l Manager,  
61 Oliver St., Boston, Mass.



**SOUTHERN REFERENCES:**

Bagle & Phoenix Mfg. Company, Columbus, Ga.  
Anniston Mfg. Co., Anniston, Ala.  
J. F. King Mfg. Co., Augusta, Ga.  
Ross Mining Co., Charleston, S. C.  
Maryland Payment Co., Baltimore, Md.  
Brush Electric Light Co., Norfolk, Va.  
Columbus Ice & Refrigerator Co., Colum-  
bus, Ga.  
Lenoir Manufacturing Co., Lenoir, East  
Tennessee.  
Yancey Mill, Graniteville, S. C.  
Charleston Electric Light Co., Charleston, S. C.



## The VICTOR TURBINE

Possesses more than Double the Capacity of other Water Wheels of same diameter, and has produced the Best Results on Record, as shown in the Following Tests at Holyoke Testing Flume:

Size of Wheel.	Head in Ft.	Horse Power.	Per Ct. Useful Effect
15-inch.	18.06	30.17	.8933
17 1/2-inch.	17.96	36.35	.8900
20-inch.	18.21	46.00	.8925
25-inch.	17.90	68.23	.8884
30-inch.	11.65	52.54	.8976

WITH PROPORTIONATELY HIGH EFFICIENCY AT PART-GATE.

Such results, together with its nicely-working gate, and simple, strong and durable construction, should favorably recommend it to the attention of ALL discriminating purchasers. These wheels are of very Superior Workmanship and Finish, and of the Best Material. We also continue to manufacture and sell at very low prices the

—ECLIPSE DOUBLE TURBINE,—

So long and favorably known. State your requirements, and send for Catalogue to the

**STILWELL & BIERCE MFG. COMPANY**

DAYTON, OHIO, U. S. A.

## ENGINES FOR SALE.

- Six 9 1/2 x 12 1/2 Automatic.
- Two 9 1/2 x 12 1/2 Plain Slide Valve.
- Six 6 1/2 x 8 1/2 Automatic; also,
- One 8 x 9 Vertical, second hand.
- One 8 x 10 Vertical, second hand.
- One 6 horse-power Baxter.
- One 6 horse-power Taylor Portable.

Address,

**Progress Engine & Machine Works,**  
SUMMERFIELD, BALTIMORE CO., MD.

**THE LONG & ALLSTATTER CO., HAMILTON, OHIO.**



Double, Single, Angle-Bar, Gang, Horizontal, Twin, Boiler, Spacing, Gate, Multiple, BELT and STEAM-DRIVEN  
Punches and Shears,  
Over 300 sizes.  
ALSO,  
Power Cushioned  
**HAMMER.**

Heavy Double Machine.

Send for New Catalogue.

Heavy Single Machine.

## Laundry Machinery.

Largest Stock. Latest Improvements. Fullest Line.



Washing Machines,  
Ironing Machines,  
Centrifugal Machines,  
Mangles, Wringers, etc.  
**BOILERS AND ENGINES.**

OUTFITS FOR  
Hotels and Public Institutions

—A SPECIALTY.—

**The A. M. DOLPH CO.**

295 Wabash Avenue,  
CHICAGO, ILL.

Cor. 9th St. and Freeman Ave.,  
CINCINNATI, O.

## THE MANUFACTURERS' RECORD

IS THE FOREMOST EXPONENT OF THE INDUSTRIAL INTERESTS OF THE SOUTH.

## High-Speed Traveling Cranes.

WE are now prepared to build HIGH-SPEED POWER TRAVELING CRANES for any capacity of load, any length of runway and any width of span, with one or two trolleys on the bridge. These trolleys to work either slow or fast, together or independently, in like or in opposite directions, horizontally or vertically, while the bridge can be traversing slow or fast at the same time in either direction. The speeds of bridge on runway are 100 feet and 200 feet per minute; the speeds of trolleys on bridge are 50 feet and 100 feet per minute, and there are four hoisting speeds of 5, 10, 20 and 40 feet per minute; all can be varied quickly, without the least shock or jar, from zero to maximum or to any intermediate speed. The load is always automatically sustained, thus avoiding absolutely the great danger and anxiety which are inseparable from the use of those cranes which require the operator to apply the brake. We have had one of these cranes of 25 tons capacity in constant use in our foundry for nearly two years, and we offer them with full confidence for the greatest range of service. We invite the correspondence of parties interested in the subject.

**WM. SELLERS & CO. Incorporated, Philadelphia, Pa.**

**WARFIELD MFG. CO.**  
336, 338, 340, 342 North Street, BALTIMORE, MD.  
Manufacturers of **SPECIAL MACHINERY,**  
Steam Engines, Shafting, Hangers, Pulleys, Couplings, Etc., Etc.  
Sole Manufacturers of **Warfield's Green Corn Cutter,**  
For Cutting Green Corn from the Cob or Canning.  
The Most Complete Line of Patented Machinery for Fruit, Vegetable and Oyster Packers' use in the United States, and the Largest Manufacturers of the same.  
CATALOGUE UPON APPLICATION.

## Build AND Repair Your Machinery

BY USING  
Engine Lathes, Planers,  
Chucking Lathes, Hand Lathes,  
—AND—  
MACHINE TOOLS GENERALLY  
MANUFACTURED BY  
**LATHE & MORSETOOL CO.**  
Worcester, Mass., U. S. A.

## South Pittsburg Pipe Works.

GEO. E. DOWLING, Pres. JAMES BOWEN, Vice-Pres. DR. W. R. TOWNSEND, Secy.  
Manufacturers of  
**CAST IRON GAS & WATER PIPE**  
South Pittsburg, Tenn.  
WARREN WOOD & CO.  
115 Broadway, N. Y.  
EASTERN AGENTS.

**CHATTANOOGA FOUNDRY & PIPE WORKS.**  
DAVID GILES, Pres. C. B. BRETHER, Vice-Pres. M. LLEWELLYN, Secy. and Treas.  
Successors to D. GILES & CO., Chattanooga, Tenn., Manufacturers of

Also Castings and Patterns of Every Description made to order.



**PENNSYLVANIA**

Standard Sections  
Light Sections  
Street Rails

Fish Plates,  
Frogs, Switches

STEPHEN W. BALDWIN  
SALES AGENT

**STEEL RAILS**

**STEEL COMPANY**

50 to 80 lbs. per yard  
16 " 45 " " "  
30 " 88 " " "  
Bolts & Nuts,  
and Crossings.

NO. 2 WALL STREET  
NEW YORK N.Y.

16 lbs. Full Size.

**R. SWORMSTEDT & CO.**

**Mill Builders**

ALSO EASTERN AND SOUTH-  
ERN AGENTS FOR

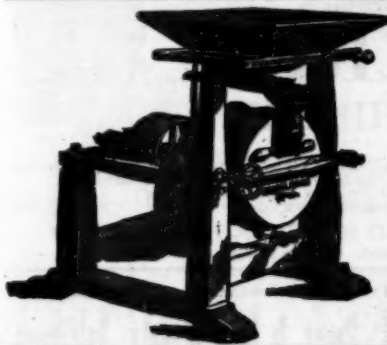
The COLUMBUS  
ROLLER CHAIN BELTING.

All MACHINERY  
sold at Manufactur-  
ers' Price, and fully  
guaranteed as rep-  
resented.

**Mill Furnishings**

Office and Shops, 603 N. Calvert St.

**BALTIMORE**



**The BEST OF THEIR KIND.**

French Burr Portable Mills.  
For grinding Black Feed and Fine Meal for  
family use.

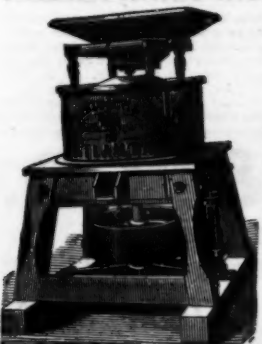
Five Points of Superiority Found in Our Mills.

- 1st. Great Strength and Durability.
- 2d. Simplicity of Construction, requiring  
less attention by reason of few adjust-  
ments.
- 3d. Reliable at all times.
- 4th. Most effectual in their work, the Table  
meal being of highest character.
- 5th. Low price.

If you are in need of a mill it will  
pay you to send for catalogue and price.

**SINKER, DAVIS & CO.**

Portable Mill Factory. INDIANAPOLIS, IND.



**The BEST CORN MILL  
IN AMERICA**

It is a broad assertion, and we mean just what it implies,  
and nothing short of it. It will make better meal, grind faster,  
hold the dress longer, and in every way the best proportioned  
and best looking mill on the market.

**MILLSTONES** for all purposes, and at prices that  
fully meet sharpest competition.

**FLOUR MILLS**—Portable and Stationary outfits com-  
plete for \$500.

**The Simplest WATER WHEEL** on the market.

**The Most Perfect SAW MILL**, Simple, and pro-  
nounced by all The Best.

**SHAPING and GEARING of All Kinds.**  
Be sure to send for Circulars and Prices before buying.

**A. A. De LOACH & BRO.**  
Founders and Machinists. ATLANTA, GA.

**TO READERS OF ADVERTISEMENTS.**

Readers of the MANUFACTURERS' RECORD  
who order any goods herein advertised, or ask  
for information concerning them, will oblige the  
publishers by stating that they saw the announce-  
ment in the columns of this paper.

**HOOPE & TOWNSEND,**

MANUFACTURERS,



**KEYSTONE BOILER RIVETS,**

Cold Punched, Chamfered, Trimmed and  
Drilled Square and Hexagon Nuts.

Finished and Case-Hardened Steel Hexagon Nuts.

**BRIDGE RODS and RIVETS.**

**Builders' IRON Work.**

TANK and COOPERS' RIVETS.

PHILADELPHIA, PA.

**THE MIDVALE STEEL CO.**

**TIRES and AXLES**

OF EVERY DESCRIPTION.



CRUCIBLE and OPEN HEARTH STEEL.

Works & Main Office:

Westtown, Philadelphia, Pa.

BRANCH OFFICE:

323 Walnut St., Philadelphia, Pa.

**CLEVELAND WHEEL AND FOUNDRY WORKS.**

**MAHER & BRAYTON, Proprietors.**

—MANUFACTURERS OF—

Car, Engine, Truck and Tender Wheels, Machinery, Railroad and Rolling Castings.

Also, CHILLED IRON RAILROAD FROGS, (Any Angle),

AND STREET RAILROAD TURNOUTS.

Office, No. 20 Carter St., — — — CLEVELAND, O.

**Ludlow Valve Manfg. Co.**

Office and Works:

938 to 954 River Street, and 67 to 83 Vail Avenue,

—TROY, N. Y.—



**VALVES**

Double and Single Gate, 4 inch to  
48 inch,—outside and inside  
Screws, Indicators, etc., for  
Gas, Water, Steam, Oil,  
and for Circulators.



Also Fire Hydrants, Yard and Wash Hydrants, Check and Foot Valves

**Vehicle Spring Co.,**

**PAT. WAGON SPRINGS & WAGON SEAT SPRINGS,**

CHATTANOOGA, TENN.



Wagon  
Seat  
Spring.

The same Wagon can be used as an Express and Lumber  
Wagon. You can raise the end of your Wagon bed and put  
the Springs on or off at pleasure.

The hooks that fit the side of the Wagon bed are a part of  
the Spring, making the lightest, the most comfortable, and the  
strongest Spring on the market. These are a great improvement on the old style seat Spring.

Vehicle Spring Co.,

Gentlemen: After having tried your Springs, both Bolster and Seat, we cordially  
endorse them as being in all respects the Best and Cheapest now on the market, and  
heartily commend them for general use. Very respectfully, etc.,

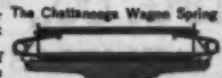
VANCE & KIRBY, J. H. WARNER & Co., Wholesale Hardware and Wagons.

DEMENT, BAIRD & Co., C. AULTMAN & Co., CHAS. W. BIRDS, Farm Implements and Wagons.

Address for further information

ATTENTION, DEALERS!  
A liberal discount to the trade.

VEHICLE SPRING CO., Chattanooga, Tenn.



Blaine's Patent.

Mention MANUFACTURERS' RECORD.

ESTABLISHED 1859.

CAPITAL STOCK \$125,000.00.

INCORPORATED 1848.

"STILL AHEAD AND BOUND TO WIN."

## The James Ohlen &amp; Sons Saw Manufacturing Co.

Standard, Solid and Inserted Tooth Saws, Mill, Muley, Gang, Drag, Cross-Cut and Band Saws.

COLUMBUS, OHIO.

WHAT PEOPLE SAY:

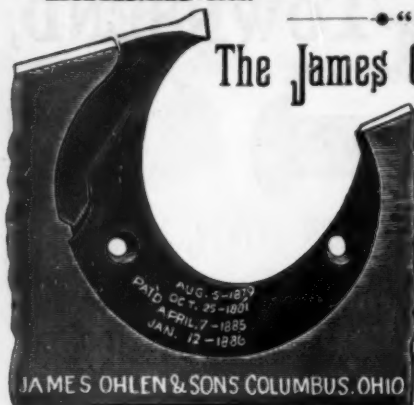
GAINESVILLE, VA., Feb. 1, 1887.  
 "I am running one of your Chisel-Tooth Saws. Have been working in saw mills for past five years, but never found a saw equal to yours. Please send me a catalogue. W. A. Williams, *Wills & Nelson*, Jonesboro, Ind., Feb. 1, 1887, write: "The 6-in. gauge solid saw is doing splendid work; inclosed find draft for same. Make and ship us 12 gauge, same hand as other, soon as possible."

B. R. Edwards, Jacksonville, Fla., writes: "Saw received. Has been running steadily and not made one bad line. Draft inclosed."

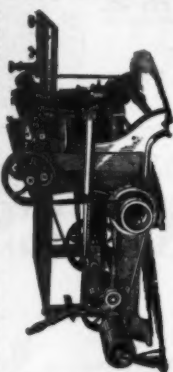
—The Above Cuts Show Our Champion Chisel-Tooth Saw.—

It has been thoroughly tested on steam and friction feed, in all kinds of timber, and we guarantee to our patrons perfect satisfaction in every respect. Each set of teeth will cut from 100,000 to 250,000 feet. We advertise only practical possibilities, and stand by what we say, and guarantee that any saws bearing our trade mark (James Ohlen & Sons) are equal, if not superior, to any others in every respect, and will give satisfaction to those using them.

Write for Catalogue and mention this paper.



Economist Planer and Matcher.



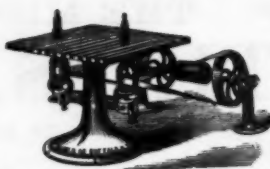
34-inch.  
 30-inch.  
 \$325.00  
 \$360.00

FRANK &amp; CO.

Manufacturers and Dealers in

## MACHINERY

FOR  
 Planing,  
 Matching,  
 Moulding,  
 Tenoning,  
 Mortising,  
 Boring,  
 Shaping,  
 Carving, Etc



176 Terrace St., Buffalo, N. Y.

A FULL LINE OF

## Wood-Working Machinery,

Designed Expressly for

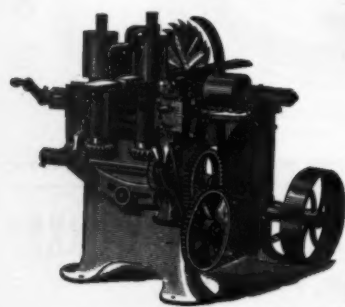
SOUTHERN TRADE.

SPECIAL DESIGNS IN

Re-saws, Planing Machines, Joint-  
 ers, Band-Saws, Etc.

Send for Catalogue and Prices before purchasing  
 elsewhere. Mention this Paper.

SNIGGS &amp; CO., - - Buffalo, N. Y.



## The Barnes Water Emery TOOL GRINDER

IT HAS NO PUMPS; NO VALVES.

No piping to supply it with water.

IT HAS NOTHING TO GET OUT OF ORDER; IS ALWAYS READY FOR USE.

It is as easily managed as a grindstone and will give vastly  
 better results. It will be sold subject to approval.  
 Send for description and prices.

W. F. &amp; JOHN BARNES CO.

Address, No. 221 Ruby St., Rockford, Ill.



## Wood-Working Machinery

Of the Latest and most Improved Designs for  
 Planing Mills, Furniture and Chair Factories  
 and Agricultural Works, Carriage and  
 Buggy Shops, and

GENERAL WOOD WORKERS.

MANUFACTURED BY

THE EGAN CO.

228 to 248 West Front St. Cincinnati, O., U. S. A.

[Improved Universal Wood Worker.] Thos. P. Egan, Pres. Ed. Ruthven, Sec. F. Danner, Supt.

(17)

STEARNS MFG. CO., ERIE, PA.

BUILDERS OF

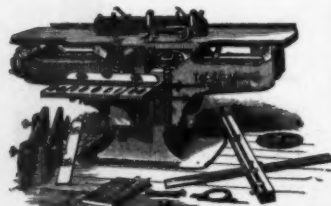
Capacity 15,000 to 400,000 feet per day. CIRCULAR SAW MILLS Complete outfits planned and furnished.

15 to 800 HORSE-POWER. ENGINES, BOILERS OF IRON OR STEEL.

BAND SAW MILLS, with Friction or Steam Feed.

STEARNS' Fractional Head Blocks, Edgers, Cut-Off Saws, Trimmers.

The Wilkin Pony Gang. No foundation. Capacity 30,000 to 40,000 feet of Flooring per day. The  
 Wilkin Heavy Gang Saw Mill for large mills. Lath and Picket Mills, Boilers, Conveyors, &c.



## CORDESMAN, MEYER &amp; CO.

171 and 173 West Second Street, CINCINNATI, OHIO.

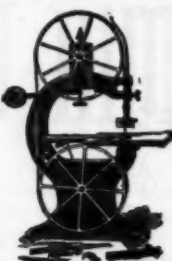
FINE GRADES OF LATEST

## Wood Working Machinery

OF EVERY DESCRIPTION.

Planing Mills, Furniture and Chair Factories,  
 Carriage, Wagon and Agricultural Works.

Write for our latest Catalogue and Price List. Correspond-  
 ence solicited.

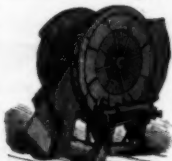


## E. &amp; B. HOLMES,

BUFFALO, N. Y.

MANUFACTURERS OF

## BARREL MACHINERY.



Hammering, Howeling and Crozing Machines, Stave Dressers, Stave Jointers, Hoop Drivers,  
 Crozing Machines, Heading Jointers, Heading Dressers, Beer Stave Benders,  
 Stave Cutters, Leveling and Trussing Machines, Cylinder  
 Stave Saws, Heading Saws, etc.

—STAVE, BARREL, KEG AND HOGSHEAD MACHINERY.—  
 Correspondence solicited. Mention this paper.

ESTABLISHED 1845. The Oldest Saw Manufactory in the South.



## TOLAND &amp; SON, Front &amp; Low Streets, Baltimore.

Particular attention paid to Large Circular Work. We warrant our Circular  
 Saws to stand more strain, without buckling or cracking, than any other make.  
 We make all kinds of Tough-Tempered Circular, Mill, Cross-Cut, Hand and Drag  
 Saws, Planer Knives, Emilage, Feed, Tobacco, Meat Choppers, and other Knives  
 made to pattern, and Moulding Bits warranted equal to the Best. N. B.—We  
 make no charge for hammering any Large Circular Saw that we can't make "go."  
 GIVE US A TRIAL, and for toughness of temper, durability and quality of  
 material, compare our work with the best you have ever used.

## A. HOEN &amp; CO.

LITHOGRAPHERS, BALTIMORE MD.

Our facilities for the production of

ARTISTIC

## Color Work

AND ALL STYLES OF

Fine Commercial Engraving

Are Unsurpassed.

All work executed under careful  
 and personal supervision at prices  
 consistent with first-class pro-  
 ductions. Sole proprietors of the

CELEBRATED

LITHOGRAPHIC PROCESS  
 Branch Establishment:  
 Mason Building, RICHMOND, VA.

ESTABLISHED 1836.



## Chesapeake &amp; Ohio Route.

Solid Trains from Washington.

LEAVE WASHINGTON, B. &amp; P. STATION:

11.20 A. M. Virginia Springs Express for Rockbridge, Alum, Warm, Hot, White  
 Sulphur and other Springs Resorts of the Alleghenies.

5.30 P. M. Louisville and Cincinnati Express. Pullman Cars and a Solid train to  
 Louisville and Cincinnati, making all Western and Southwestern connections.

Washington Ticket Office,

513 Pennsylvania Avenue,

FRANK TRIGG, Northeastern Passenger Agt.,

JOHN NUIE,  
 General Traffic Manager.

H. W. FULLER,  
 General Passenger Agt.,



# HOWARD & BULLOUGH'S

OPENERS, LAPPERS, REVOLVING FLAT CARDS, ELECTRIC STOP MOTION DRAWING FRAMES, SLUBBING, INTERMEDIATE, ROVING AND FINE JACKS, (NEW PATTERNS 1886) ALL MADE BY TOOL WORK; EVERY PART EITHER TURNED, MILLED OR PLANED, AND CONTAINING MANY PATENTED AND VALUABLE IMPROVEMENTS. WARPERS, COPPER CYLINDER SLASHERS, (New Models.)

**SOLE IMPORTERS,**  
**RILEY & GRAY, - - BOSTON, MASS.**  
 CARD CLOTHING, WOOLEN AND WORSTED MACHINERY, Etc., Etc.

## The Whitin Machine Works

J. LASSELL, President and Treasurer

G. E. TAFT, Agent.

H. ELLIS, Superintendent.

MANUFACTURERS OF

## COTTON MACHINERY

Openers, Lappers, Cards, Railway Heads, Drawing, Ring Spinning,

SPOOLERS, WET and DRY TWISTERS, REELS,

—WARPERS, DRESSERS, LOOMS, &c.,—

Whitinsville, Worcester County, MASS.

## Queen City Printing Ink Co.

CINCINNATI, OHIO.

WITH WHICH THIS PAPER IS PRINTED  
 IS MADE BY THE  
**THE INK** QUEEN CITY PRINTING INK CO.  
 CINCINNATI, O.

MANUFACTURERS OF ALL DESCRIPTIONS OF

# INKS!

*Varnishes and Sizes*

FOR PRINTERS' USE.

New York Office, . . . 194 William Street.

Philadelphia Office, . . . 434 Walnut Street.

## SAVE FUEL.

Are you putting cold water into your boiler?

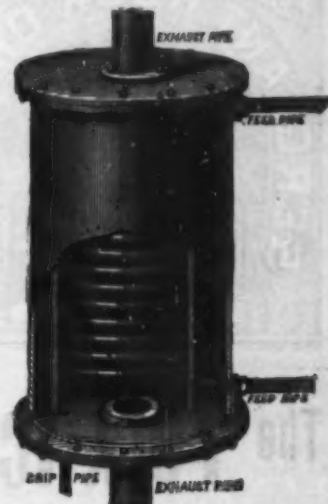
You can heat it boiling hot with the exhaust steam out of your engine.

You would save TWENTY-FIVE PER CENT. of the fuel required to do the same work without a

• Feed Water Heater. •

Send for our catalogue on this subject.

THE D. A. Tompkins Co. Charlotte, N. C.



THE  
**PREMIER FLOUR  
 OF AMERICA.**  
 Patapsco Flouring Mills.

—ESTABLISHED 1774—

The value of Flour depends upon the essential elements of nutrition contained in the bread it makes. Maryland and Virginia Wheat, from which our PATENT ROLLER FLOURS are chiefly manufactured, has long been conceded to be of most superior quality, because it has a better combination of gluten and phosphates than any other. This fact is recognized, not only in this country, but in the United Kingdom as well, where the "PATAPSCO SUPERLATIVE" commands decidedly more money than any other American Flour, thereby clearly demonstrating its superior qualities for making the whitest, sweetest and most nutritious bread.

ASK YOUR GROCER FOR IT, ALSO FOR

PATAPSCO FAMILY,  
 CAPE HENRY FAMILY,  
 PATAPSCO EXTRA,

NORTH POINT FAMILY,  
 CHESAPEAKE EXTRA,  
 BEDFORD FAMILY,

ORANGE GROVE EXTRA,  
 MAPLETON FAMILY,  
 FIMLICO (GRAHAM.)

**C. A. GAMBRILL MFG CO.**  
 Office, 32 Commerce St., Baltimore, Md.

## The DEANE STEAM PUMP CO.

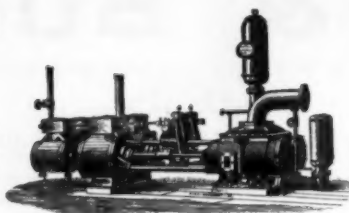
—HOLYOKE, MASS.—

BUILD

## STEAM \* PUMPING \* MACHINERY

OF EVERY VARIETY.

Send for New Catalogue No. 22.



## The DEANE STEAM PUMP CO.

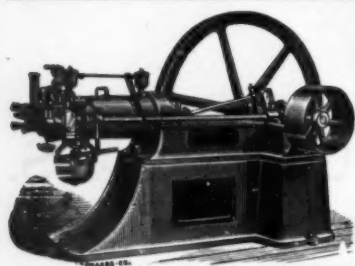
NEW YORK, BOSTON,

CHICAGO, PHILADELPHIA, ST. LOUIS,

MAKE A SPECIALTY OF

## Water Works ENGINES

FOR THE SUPPLY OF CITIES AND TOWNS.



Over 18,000 in Use.

## Otto Gas Engine

20 to 75 per ct. less Gas consumption than ANY OTHER ENGINE.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started instantly by a Match, it gives full power immediately. When stopped, all expense ceases.

Guaranteed to Consume 25 to 75 Per Cent. less Gas than any other Gas Engine Doing the same Work.

No explosions, no fires nor cinders, no gauges, no pumps, no engineer or other attendant while running. Recommended by insurance companies. UNSURPASSED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &amp;c. Sizes: 1 to 25-Horse power.

Branch Office, 130 Washington St., Chicago.

OTTO GAS ENGINE WORKS, Schleicher, Schumm &amp; Co. 33d &amp; WALNUT STS., PHILADELPHIA.

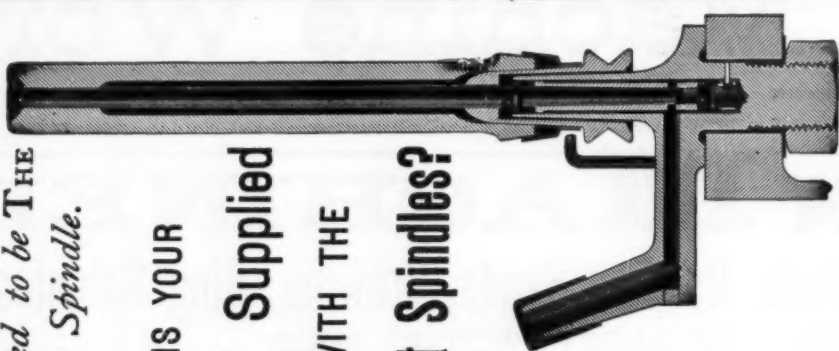
Since the Invention of  
the Sawyer Spindle, the  
most Popular Spindle has  
proved to be THE  
BEST Spindle.

IS YOUR

Mill Supplied

WITH THE

Best Spindles?

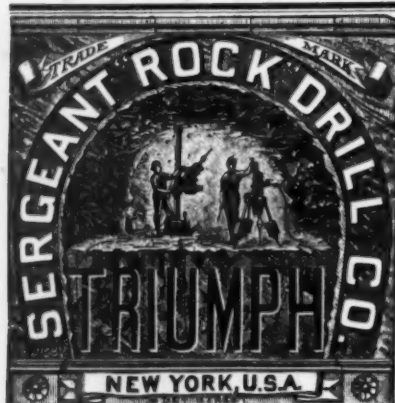


No. 49 RABBETH.

NUMBER 49 RABBETH SPINDLE

Is undoubtedly the most economical and Satisfactory Spindle in the market for all ordinary numbers of yarns.

IF YOU HAVE NOT SEEN IT RUNNING, Send for a Sample.

GEO. DRAPER & SONS,  
HOPEDALE, MASS.Telegraph Address and Railroad Station,  
MILFORD, MASS.

## The 'SERGEANT' ROCK DRILL

Is More Simple in Construction, More Effective in Operation, and

## REQUIRES LESS REPAIR

THAN THE BEST-KNOWN ROCK DRILLS IN THE MARKET.

We are Prepared to Prove the Above Statement.

AGENTS FOR THE NORWALK AIR COMPRESSOR.

Correspondence Solicited and Estimates Furnished for all Kinds of MACHINERY Required in MINING, QUARRYING or CONTRACT WORK

ADDRESS,

Sergeant Drill Co., 16 Dey St., New York.

The York Ice and Refrigerating Machines York Mfg. Co.  
YORK, PA.

## ALEXANDER BROWN &amp; SONS, { ESTABLISHED 1811 } BALTIMORE. Transact a General Foreign and Domestic Banking Business.

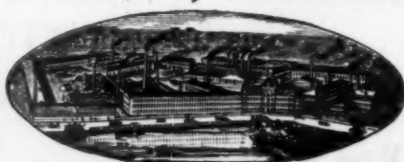
Buy and sell Bills of Exchange on Great Britain, Ireland, and other foreign points. Issue Commercial and Travelers' Credits in Sterling, Francs or Dollars, available in any part of the world. Make Telegraphic Transfers of Money between this and other countries. Make Collections of Drafts. Railroad, Municipal and other loans negotiated, and advances made on Cotton, Grain, Tobacco and other approved securities. Interest allowed on Deposits of Banks, Bankers, corporations and individuals. Members of Baltimore Stock Exchange. Buy and sell Stocks and Bonds in this and other cities. Private wire to Philadelphia and New York.

BROWN BROTHERS &amp; CO., New York, Philadelphia and Boston.

BROWN, SHIPLEY &amp; CO., London and Liverpool.

## Washburn &amp; Moen Mfg. Co., Worcester, Mass.

MANUFACTURERS OF



Iron, Steel and Copper Wire, Wire Rope, Barbed Wire.

NEW YORK WAREHOUSE, 16 Cliff Street.

CHICAGO WAREHOUSE, 107 Lake Street.



# Manufacturers' Record.

PUBLISHED EVERY SATURDAY BY THE  
MANUFACTURERS' RECORD CO.

J. W. BIGSBY, *Presd.*  
R. H. EDMONDS, *Treas.*  
WM. H. EDMONDS, *Secy. & Manager.*

R. H. EDMONDS, EDITOR.

—OFFICE—  
COR. EXCHANGE PLACE AND COMMERCE STREET  
BALTIMORE.

NEW YORK OFFICE:  
Telephone Building, 18 Cortlandt St.

SUBSCRIPTION \$3.00 A YEAR.

BALTIMORE, AUGUST 20, 1887.

IN publishing to-day the last of the series of letters by Hon. William D. Kelley on the agricultural and industrial resources and progress of the South, we desire, on behalf of the South, to thank Judge Kelley for these most admirable letters. They have been of untold value to this section, and have carried a conviction of the almost measureless possibilities of the South to thousands who have heretofore been skeptical.

As a statesman who has for many years stood in the front ranks of America's leading men; as a wise counsellor among the law-makers of the nation; as a leader among leaders, with every energy bent to aid in the progress and advancement of all parts of this great country, Judge Kelley has commanded the respect and admiration not only of his own party but of the entire country. Coming from such a man, these letters upon the South have received universal attention; they have more than met the high expectations aroused when the announcement was first made that they would be published in this paper. The series is fittingly ended in the letter of to-day. This letter alone will prove of inestimable value to the South; and not to the South only, for it is a deeply instructive discussion of economic questions that are of world-wide interest.

We trust that Judge Kelley will consent to have these letters published in book form. They ought by all means to be put in such shape. In all parts of the country there would be a demand for this book.

THE special fall number of the American Stationer, of New York, is a magnificent specimen of printing. It contains 160 pages, and is one of the finest special issues of a trade journal that we have ever seen. Messrs. Howard Lockwood & Co., the publishers, have surpassed all their former efforts, we believe, in the production of this superb issue.

## Some Points as to Cotton Mill Building.

IN the last issue of the MANUFACTURERS' RECORD the importance of building more cotton mills in the South, and especially in the towns where iron industries are being developed, was suggested, that diversified employment might be afforded to youths and women who would otherwise have no work to do, and at the same time establish a business that would yield good profits on the capital invested. This point, as well as a number of others of general interest, is strongly presented in a letter recently written by Mr. John Hill, the noted engineer of the Eagle & Phoenix Mills, at Columbus. Mr. Hill is an undoubted authority on cotton mill building, and there is no man in the South probably who is in a better position to give sound advice on this subject than he. In his letter to Mr. W. L. Chambers, of Montgomery, Ala., on the question of cotton mill building, he states that in his opinion the improvement of water powers for running cotton mills is a thing of the past. They are, he says, "usually inconvenient, and the investment necessary and other disadvantages outweigh any advantage, except in such places as Augusta, where fuel is expensive and large investments have been made by the city on which no returns are expected, and the power can be had at nominal rates in convenient places. Where coal is as cheap as at Montgomery water power development, even if existing, would be financial suicide." In conformity with this opinion you will find existing facts in New England. There are over 50 cotton mills in Fall River, and, excepting one or two smaller ones, every mill is run by steam, and the usual price of coal is about \$4 per ton. Every mill in Lowell has a steam engine, and the great bulk of goods is made by steam at an average price for the whole of New England of near \$4 per ton for coal. This is double the price of coal in Montgomery. The cost of cotton must forever be in favor of the Southern mill, and is a saving equal to the total freight charge to ship it East. \* \* \*

The modern steam engine may be regarded as the means of driving cotton mills, and the cheaper the fuel the more advantages it offers for power, other conditions being equal. If I were going to build a cotton mill to-day on my own account at any point with coal cost at \$3 or less per ton, I would not for a moment consider any power other than steam."

According to these statements there is no longer any reason why capitalists should hesitate to build mills, except at places where they can secure water power. In Alabama, where fuel is so extremely cheap, cotton at hand in abundance and plenty of labor to be had, many cotton mills ought to be established.

On the question of furnishing employment to women, and the necessity of this in towns where industrial enterprises afford work to a large number of men, Mr. Hill says:

"You will bear in mind that no industrial community can prosper where only half the population have employment. Such labor cannot be afforded by the laborers themselves at the prices which it could if all were employed. If a man of family is to obtain employment in your iron furnace or oil mill and allow his family of boys and

girls to remain at home idle, he cannot support that family at the same wages he could if one or more were assisting."

The cotton mill affords employment, he writes, to a class of people (say 75 to 80 per cent.) who to-day can find no employment in Montgomery, and what is true of Montgomery in this respect is equally true of dozens of other places in Alabama and the South generally. Should you build a mill, he continues, requiring 400 hands, fully 300 of those would be new creations as to producers of values from among your laboring people having no regular employment to-day—namely, women and children.

The average results in profits from manufacturing cotton South in well-constructed mills is, Mr. Hill writes, as great as with any other regular business. Profits and losses depend largely on the capacity of the general management, the same as with other business. The improvements in machinery and appliances in cotton mills for the last 10 years have been such that a new, modern, properly constructed mill has very considerable advantage over one with less modern machinery. Designing and proportioning machinery for a cotton mill is almost an exact science, and their need be no risk as to having this correct and to the best advantage.

The per cent. of "general expenses" decreases in proportion as the size of mill increases. For best results a mill built at a cost of not less than \$200,000 will, Mr. Hill claims, be found about as small as capital should invest in with confidence. At present the cost of machinery is very low compared to several years since, and it is an exceptionally favorable time in this regard.

The cost of building material in Montgomery is stated to be considerably less than at Augusta, and while the real estate for a mill in the latter city which Mr. Hill recently engineered cost \$40,000, there are a dozen or more prosperous towns in Alabama and Tennessee where a site would be readily given without the cost of a cent.

If you will employ females and minors you should by all means, writes Mr. Hill, build a weaving mill, and probably one to manufacture standard styles of brown goods would be best for local and vicinity markets.

Regarding the time required to build a \$250,000 mill, and the cost and time of payment of machinery, Mr. Hill says:

"I suppose that from the commencement to build until the mill starts up, about one year would likely be required, with ordinary push. Payments would fall due on building during its erection. Machinery would arrive say 6 or 7 months after the mill building is commenced, and payments for the machinery would fall due say from 8 months after commencement to one year for final. No advance payments are required on cotton machinery, engines or equipments."

You cannot afford to miss Judge Kelley's letter. It is the crowning one of the admirable series that he has been writing.

## Judge Kelley's Letter.

Never before has the fatal mistake of Southern farmers, in devoting their attention wholly to the cultivation of cotton, been more strikingly portrayed than in the letter of Judge Kelley published in this issue of the MANUFACTURERS' RECORD. No country, it matters not how fertile its soil may be, can ever secure permanent prosperity where all interest is centered in the production of one crop, whether that be cotton, wheat or corn. In truth, to go still farther and quote the opening words of Judge Kelley's letter:

"In all ages and countries, nations whose people have devoted themselves exclusively to agriculture have been liable to the horrors of famine. This proposition is one of universal application, and is as demonstrably true of our country, in the closing years of the nineteenth century, as it was of Egypt in the days of the Pharaohs."

The South has fully tried the exclusive agricultural system. How is it possible under such a system for a country to attain prosperity when so large a proportion of its people are forced to remain in absolute idleness? When agriculture alone prevails where is employment to be found for those who cannot engage in that occupation? What is to become of those who, under other circumstances, would be engaged in industrial pursuits? Where will the many women, young and middle-aged, who have no one to support them, find a means of earning a livelihood? Contrast the condition of such a country with that of one where a wide diversity of employments is open to every one; where the shops and foundries, the cotton mills, the woolen mills and other innumerable industries afford work, not only for the men, but for the women compelled by circumstances to support themselves. And then it is not only that work is furnished to so many, thus adding immensely to the aggregate earnings of a community, but the non-agricultural classes must, of necessity, be the consumers of what the farmers produce. To every farmer adjacent to industrial centers there is given the opportunity to diversify his productions and to find a home market for all that he can raise. Of what good is it to tell a farmer to abandon the exclusive cotton system and diversify his crops if he is so far away from a market as to make the raising and shipping of fruits, vegetables, poultry, &c., impossible? Build an industrial town within five miles of that farm and it will not be necessary to urge upon him to diversify his crops, for he will learn that quickly enough. Given a home market for all that he can produce, the Southern farmer will soon revolutionize the farming system of that section.

As one contemplates the condition of thousands of the people of the purely cotton districts of the South, he cannot but feel that the great need of these people is employment. They are cut off from the opportunity of securing work. No greater material



blessing can come upon the South than the development of such industries as will afford this needed employment. This great inestimable blessing is rapidly drawing nearer. From Virginia to Texas new enterprises are daily coming into existence. They are opening to thousands and tens of thousands profitable work, and prosperity is coming to many who have for years endured poverty. Are the people of the South willing to check this growth by adopting free trade?

### A Home Market.

We met up with an excellent old gentleman from the country this morning who was dispensing out vegetables at a good price to our populace, and made some inquiries of him about the amount of his annual sales here.

"I have been living," he said, "in Calhoun county over twenty years, and have raised quite a family of useful children, but until about six years ago it was with difficulty that I managed to support them. Prior to that time I only raised corn and cotton, and at the end of each year I had not a dollar in my pocket. Laborers began to come into Anniston. I conceived the idea of selling them fruits and vegetables, and since then my sales have annually increased, and this year they will amount to nearly \$600. My family is now always well provided for; am educating my younger children; have bought more land and saved some money, and we are happy and contented. I never come to town without loading my wagon or buggy with produce. Oh, yes, Anniston has been of wonderful benefit to me."

And that is the way farmers are being benefited wherever an industrial town grows up in the South. A home market is created, and this brings prosperity to the farmers. Protection develops manufactures, and manufactures develop farming.

We invite the attention of our readers to the advertisements of several Alabama towns that are offering great inducements to manufacturers desiring to locate in the South. These places are among the most enterprising in the whole South. They are growing very rapidly and new industries are constantly being established. They are on a most solid basis and their future is certain to be prosperous. Surrounded by vast mineral and timber wealth and by a splendid agricultural country, with a fine climate summer and winter, and excellent water, there is every advantage to ensure a rapid growth. They are offering liberal inducements to secure the establishment of new industries or the removal from other sections of good enterprises. There are fine openings in all of them for many new enterprises, from brick yards and wood-working establishments to rolling mills, cotton mills and kindred industries. Full information as to these places can be obtained from the several companies whose names are given in the advertisements.

READ and ponder over what Judge Kelley says regarding the harmonious development of the agricultural, commercial and manufacturing interests of the South. You cannot spend an hour to better advantage.

## HON. WM. D. KELLEY.

In His Closing Letter of the Series on the South, shows that

### The Agricultural, Commercial and Manufacturing Resources of the South

Must be Harmoniously Developed to Insure the Permanent Prosperity of that Section.

Improved Farming Methods Badly Needed.

[Copyrighted.]

THE ELMS,  
PHILADELPHIA, August 1, 1887.

Editor *Manufacturers' Record*:

In all ages and countries nations whose people have devoted themselves exclusively to agriculture have been liable to the horrors of famine. This proposition is one of universal application, and is as demonstrably true of our country, in the closing years of the nineteenth century, as it was of Egypt in the days of the Pharaohs.

Among the brave and determined leaders whom Grant paroled at Appomattox was Gen. Wm. T. Wofford, of Georgia. His home was at Cartersville, in the fertile and everywhere beautiful valley of the Etowah, to which, when the terms of his parole relieved him from duty on the staff of Gen. Lee, he immediately returned. The valley, clad as it was in the verdure of spring, seemed to him more beautiful than ever; but it was with the charm of outline and of verdure mingled with Flora's daintiest and most brilliant coloring, and not the beauty which springs from the promise of future plenty and comfort. Broad acres that would reward labor an hundred fold, the conditions of nature which promote abundant crops and thousands of willing laborers were there, but the conjunction of happy circumstances was not complete; indeed it was fatally defective, for, though the season for planting had come, seeds from which food might be grown were wanting by the people, and their fields were their only resource. A day at home served to show the great-hearted and keen-eyed soldier the path of duty; it was to hasten to the country's capital and with the courage of one who had never faltered on the field present to the representatives of the people, who had approved the terms of parole which left him in possession of his horse and sword, the necessitous condition of the millions whom they had been unable to subdue until their last resource had been exhausted.

As soon as he had adopted this resolution Gen. Wofford hastened to Washington, where it was his privilege to meet him immediately after his arrival and to co-operate with him in the noble work to which he had devoted himself. Happily my annual quota of seeds had not yet been drawn upon, and to order it from the Agricultural Department to my rooms and invite the general to avail himself of the premises for his workshop or headquarters was the work of but a moment. During the next day a paper assigning the quota of seeds belonging to the signers was circulated among members, and before the adjournment of the House the vegetable seeds to which many Northern constituencies were entitled had been transferred to the order of Gen. Wofford, who undertook to broaden his distribution beyond the range of his military connections and personal sympathies.

Upon the suggestion of friends he also saw the President, the Secretary of War, the Secretary of the Interior and the Commissioner of Agriculture. His presentation of the condition of the people whom he assumed to represent made it apparent that the necessity for immediate relief was too

urgent and general to be met by individual action.

Accounts forwarded to the War Department by district commanders confirmed Gen. Wofford's most deplorable statements, and invited the immediate action of Congress in behalf of our suffering countrymen. Unwarranted responsibilities were assumed by the chiefs of the War and Interior Departments and the Commissioner of Agriculture while appropriate legislation was being matured and enacted. Among the agencies for systematic relief that were provided was that of the Bureau of Refugees and Freedmen, the law establishing which ignored distinctions of race or color, and provided for the distribution among the necessitous not only of seeds but of the means of current subsistence.

My intercourse with Gen. Wofford during the weeks he remained in Washington was as frank and as cordial as mutual respect and common endeavor in a cause in which both were heartily interested could make it. I was conscious of a keen desire for information as to the industrial condition of the South, and especially as to its agriculture; and well do I remember the surprise with which I learned that its farmers never availed themselves of the invigorating and otherwise profitable practice of rotating crops, but devoted themselves to cotton-growing, and resorted to imported or manufactured fertilizers when able to pay for them. It was while portraying the fatal influence of the one-crop system that I alluded to the great value of clover in promoting a supply of barn-yard manure and in the elements which the plant itself gives to the soil when, after having yielded crops of hay, it is ploughed under. The response to these suggestions was that clover had not been believed to be among the possible crops of Georgia. I recur at this time to the conversation of that evening because of the intense surprise with which I listened to Gen. Wofford's statement, and because he then expressed the hope that the discovery of a small bag of clover seed among the effects of a fugitive from Northeastern Virginia might lead to the general cultivation in his part of the State of that beneficent grass, though the belief that it could not be grown in Georgia had been universal.

Under the influence of a series of experimental plantings of seed from his accidental sack by the Virginia farmer this false belief was, he said, yielding to the power of demonstration, as every such experimental planting had been followed by an abundant crop. Though I had heard much of the artless and exhausting culture of the cotton lands of the Gulf States and of the lowlands generally of the South, I would not have believed on testimony that could be questioned that the same fatal improvidence had characterized the recent methods of the farmers of the once famous wheat-growing valleys of upper Georgia. I could not, however, question the statements of my informant; and rapidly accumulating evidence forced upon me the conviction that, though the people of the South were so devoted to planting interests as to be unwilling to permit the establishment among them of work-shops, foundries, mining camps, furnaces, forges, factories, and the commercial, professional and social accessories of such establishments, they were in no just sense of the word agriculturists, and each day furnished abounding proof that they knew nothing of "the art or science of cultivating the earth;" that they were not cultivators of the fields, and did not practice "husbandry with frugality and thrift." They grew cotton in some sections, sugar in others, tobacco, rice and hemp each in other sections, but they did not raise their own household supplies, or make and gather domestic fertilizers with which to invigorate their famished fields. Since the war cotton seed has by various processes of manufacture

become almost as profitable as the crop of lint, one of its products being an absolute refutation of the theory that successful cotton-growing must impoverish the soil. I allude to cotton-seed cake the residuum from which the oil has been pressed, which is a nutritious food for cattle and horses, and an element of inestimable value in barn-yard manure. But in the days of which I write the cotton seed not required for planting was loosely scattered over the fields as a cheap fertilizer. In no part of the South in which I have traveled have I been able to discover evidence that fields from which crops were expected had received from their husbandmen the sustenance and care that a wife might expect from even a shiftless husband, or the provident care that the law exacts from a ship's husband. Some of the impressions on this point made upon me by the terrible effects of the destructive methods of the so-called agriculturists of the South during my trip in the spring of 1867, just twenty years before my recent visit, were happily recorded by a reporter of the *Philadelphia Inquirer*, and may be found in a volume published by Henry Carey Baird in 1872.\*

On that trip I left Cincinnati en route to New Orleans, crossed Kentucky, Tennessee, Mississippi and Louisiana, and returned by way of Alabama, Georgia, South Carolina, North Carolina and Virginia. On the evening following my return thousands of my fellow-citizens came to my home with music and banners to congratulate me on my safe return, and I present the following extracts from the impromptu remarks addressed to them as I found them reported in the *Inquirer*:

I saw during my trip a country upon which the Almighty has with most lavish hand bestowed His richest material gifts. It is gorged with every mineral. I have scarcely been in a State that does not abound in coal, iron, copper and lead, and have traveled over a region of country richly underlaid with gold-bearing quartz. Let me speak specially of North Carolina, because, as is equally true of Virginia, poverty has driven hundreds of thousands of her native citizens into exile. My friends, North Carolina is the most beautiful and richest portion of God's earth upon which my vision or feet have ever rested. You know that she produces cotton, rice, indigo, tar, pitch, turpentine and superior timber. You know that her soil and climate are adapted to the cereals, wheat, corn, rye, buckwheat and oats, but you probably do not know that that State, long known as the Rip Van Winkle of the Union, from which more than fifty thousand free white people have fled to the two States of Indiana and Illinois, is the land of wine and honey, the apple and peach, the fig and pomegranate, all of which I saw prospering in open field and under the most artless culture. Its native vines made the fortune of Longworth, who carried cuttings thence. The wine-producing vineyards of Western Pennsylvania, and around the borders and on the islands of Lake Erie, and those scattered through Missouri, are from cuttings taken from the native vines of North Carolina. The Catawba, the Lincoln, the Isabella, and richer than all, the Scuppernon, of which, as it has not yet been successfully transplanted, Eastern North Carolina has the monopoly. There it grows spontaneously as a weed.

The woods and hillsides teem with the richest honey-bearing flowers, and the bees invite you to put up a rude box, that they may reward your kindness with the sweetest treasure. There is not a vegetable we produce that will not thrive in North Carolina; and as I traveled through this native wealth and beauty I saw how sin had driven man out of Paradise, for never had I seen such poverty as I found in North Carolina, save in South Carolina, Alabama and Mississippi, where people are starving in the midst of nature's richest bounties.

You cannot comprehend and credit this statement. I tell you it is true. I could not credit it myself. It was long before observation enabled me fully to comprehend it. Go with me to Mississippi. I will take you to Hernando. Once Hernando was an important railroad town and station.

\*Speeches, addresses and letters on industrial and financial questions, by William D. Kelley, pp. 373-678.



There are scattered around it a few large old mansions, abandoned and going to ruin. It was once the center of a great cotton-growing region, but now, as far as the eye could range from the platform of the car, we saw nothing but sedge grass, a surface weed, or the red soil washed and cut by countless gullies, till under the bright sun it looked like myriad flames of red fire blazing up from the earth.

The owners of that once rich land had planted it each successive year with cotton, till they extracted from it every agricultural element and those fibrous roots with which nature mats the soil and protects it from washing. In response to a question as to the extent of the desolation we beheld, a fellow-traveler, a Mississippian, said: "It is pretty wide. There is not a plantation within miles of the station on which a family could make a living;" and he added, "the soil was always light, and when the rain began to wash it, it made quick work of it." Skillful culture would not only have saved that wide region from desolation, but added to its wealth-producing power.

What would we in Pennsylvania, with our manifold diversification of pursuits, think if the owner of a farm of one hundred acres should apply to the Government for rations to support his family? Yet it is not a novel or unnatural sight at the South. Lieutenant-Colonel J. R. Edie, of the 8th Infantry, is Post Commandant at Salisbury, N. C., and administers the affairs of the Bureau of Refugees and Freedmen within his command. I recognized in him not only a gallant son of Pennsylvania, but an old personal friend. It happened to be a ration day, which occurs, I believe, once a fortnight, and with my companions I gladly accepted his invitation to his office, that we might observe the character and necessities of the applicants. They must have numbered hundreds, a large preponderance of whom were whites. Many of them had walked more than fifteen miles to procure a little corn and bacon.

As one lean, pale woman advanced and gave her name, the Colonel said: "You have been here before, and I think you own land." "Yes, sir," said she, "I own a little." "How much?" asked he. "About a hundred acres." "How much of it is cleared?" "The butt end of it." "Well, then, why did you not plant it?" "All that is cleared is planted." "What, then, brings you for rations?" "Want, Colonel; I must have something for the children to eat till the corn ripens. I can't make it ripen till the season comes." (A voice—"They are too lazy to work.") No, my friend, they are not too lazy to work. They are willing to work. They need guidance and instruction. I told them in my public addresses that in their primitive way they work harder than we. ("They are too lazy to work.") No, my friend, I understand them better than you. You would deem it hard work to walk fifteen or twenty miles for a few pecks of corn and pounds of bacon, and carry them on your shoulder to your distant home.

The woman of whom I was speaking was not probably a lazy woman. She knew nothing of our agricultural implements or methods but was doubtless regarded by her neighbors as an adept in Southern agriculture. Like her neighbors, whose lands would not produce cotton, or who did not own laborers to cultivate and pick it, she had planted her exhausted acres with corn, and when that single crop failed the country was famine-stricken, as Ireland was when rot assailed the potato. Yet we had eaten, the day before, at Concord, but thirty miles distant, at the hospitable table of Mr. McDonald, an old Pennsylvanian, but long a citizen of North Carolina, a variety of delicious vegetables, among which were potatoes as mealy as can be grown on our virgin hillsides.

The people of whom I speak had been taught to believe that cotton was the one thing to the production of which the South should devote herself, and that corn as food for "mules and niggers" might, with propriety, be raised when cotton could not. A former Southern leader said to me: "We bought niggers and mules to raise cotton, and raised cotton to buy niggers and mules," and I good humoredly replied: "Yes, and your continuous culture of cotton having eaten up your land, your negroes and mules were about to eat you when you began the war." Thus it came that destitution and despair brooded over the sunny South, while its unequalled water-power runs to waste, and its widely diffused and inexhaustible mines of gold, silver, copper, lead, iron, etc., and coal to work them, lie undisturbed where nature deposited them. There are in North Carolina, as the census shows, 47,000 white adults who cannot read, and in Virginia 74,000.

But it may be asked why recur to these painful memories of twenty years ago, and it may be suggested that they do not tell the story of the Old South and her methods but portray the horrible results of years of fratricidal war. Such question or suggestion would involve a vital misconception of the facts. The poverty that made such drafts on my sympathies was not of recent origin; it had existed before the war, and was an inevitable consequence of methods which could not fail to impoverish the people, as they involved a systematic and persistent exhaustion of the lands from which alone they could draw supplies. That the absence of agricultural implements and the prevalence of exhaustive methods were the cause to which I then ascribed the wretchedness of the Southern farmers is shown by the following passage from the address above referred to:

What are required to regenerate the South are subsoil ploughs, phosphates, agricultural implements generally, a large increase of horses, mules and horned cattle, a steadily increasing supply of steam engines and machinery, and such manufacturing machinery as can be moved by water-power. These, with a comparatively small amount of cash capital and a few earnest men to teach others their use and value would in a few years make the South bloom like a garden, and develop a population as loyal as was that of any Northern State during the war. The interests of Northern capitalists require them to supply these potent agents at the earliest practicable day.\*

But apart from the New South, by which I mean the country around the region of the rapidly developing iron industries, and of such manufacturing towns as Augusta and Macon, and the commercial centers created by the expansion of the Southern railroad systems, this wretched poverty prevails now, twenty-two years after the close of the war, and in spite of the efforts made by the government and the people of the North to mitigate the woes they were enduring, whether they had been caused by the war, or were, as I assert, the result of fatally vicious economic and agricultural theories. Yes, the poverty and ignorance that characterized the "poor whites," "the low downs," "the clay eaters" and "the crackers" of the Old South still prevail over vast stretches of the best agricultural and the richest mineral States of the marvelously endowed South. Though prepared to adduce volumes of pregnant proof of the truth of this statement, I decline responsibility for it, as I make it here under the sanction of the name of my friend, Hon. L. Q. C. Lamar, the present Secretary of the Interior. Mr. Lamar recently favored a reporter of the *Hartford Times* with an interview on the industrial condition of the South, which was published with his consent. The statements of Mr. Lamar on the points I am considering are so accordant with my own observations, and so illustrative of the soundness of my politico-economic theories, that I give a portion of the interview verbatim as I found it in the paper referred to:

"The apparent prosperity of the South," said Secretary Lamar, "is to be found only in the cities, and not all of them share it. Atlanta, Chattanooga, Nashville, Knoxville, Birmingham and other cities that are the centers of mineral development already made or anticipated are growing rapidly in population and apparently in wealth. Towns, also, that are situated upon the new railroads that have been built during the past few years are larger and more thriving than they were, but their growth has been largely at the expense of less fortunate towns that have either stood still or have actually deteriorated. This circumstance, I think, is likely to give an erroneous impression to the stranger passing through the South on the railways. He sees the towns at the various stations apparently thriving, the centers of new commercial enterprises, and he naturally concludes that the South is making very rapid progress; but he doesn't know that the man who has opened a new store at

one of these places has probably removed there from some town distant from the railroad where he closed up his former business, or the man who is building a new house is possibly a farmer who has become discouraged in the vain effort to make a living planting cotton, and has sold out and come to town hoping to do better, or, perhaps, to have better opportunities for the education of his children.

"I am inclined to think, also, that the present prosperity of the cities which are the centers of industry in the mineral region, or whose growth has been stimulated by their proximity to or interest in it, is, to a great extent, speculative, based in some measure, at least, upon anticipated developments rather than upon those already made. Of course, I know that a good deal of capital has been invested there, and that much of it has gone from the North, and that many Northern people are settling there, and I don't wish to be understood as doubting the future prosperity of the region. I only say that the returns have not yet been realized. I ought to say that I have very little personal knowledge of the affairs of those sections of the South of which I have been speaking. The 'boom' has come since I have been there to remain long at a time, and my opinions are formed from what I have read in the newspapers and heard from persons who have been there. I think you will find, too, that such cities as Charleston, Savannah, Mobile and New Orleans are not showing evidences of prosperity. Let us see," said he, taking down a compendium of the last census, "how much these cities increased in population between 1870 and 1880. Charleston gained in population in that decade 1,028, or at the rate of about 1.15 per cent.; Savannah gained 1,474, or about 5.1 per cent.; Mobile actually lost 2,909 in population, and New Orleans gained 24,672, or about 13 per cent. If you remember that the average increase of population throughout the whole country during the same ten years averaged 30 per cent., you will see that there is nothing encouraging in these reports."

"How do you account for the apparent stagnation in what were formerly the great commercial centers of the South?" I asked.

"By the depression of the planting interests, of which I have already spoken," was the reply. "They are dependent upon the agriculture of the country for their trade."

"Haven't the crops been good?"

"Yes; that of last year was the largest ever made with one or two exceptions. But the crop to-day is not proportionally as great as it was before the war. It must be remembered that the population of the South increased nearly 50 per cent. between 1860 and 1880. As agriculture is almost our only industry, and as cotton is our principal product, if we only held our own we ought in 1880 to have marketed 50 per cent. more cotton than we did before the war. But the truth is that the large crop of last year was only 25 per cent. greater than that of 1860. In other words, our population increased during that twenty years just twice as fast as our ability to feed and clothe it. You wouldn't look for prosperity under such circumstances, and you will not think it strange that the cities which are dependent upon agriculture for their trade should languish."

"I have not been South in several years" I said; "are there outward signs in the country of this depression of which you speak?"

"Yes, especially when one goes away from the railroads. Improvements are not kept up, and there is a general air of poverty, want of thrift, and the allowing of things to go to decay."

"To what cause do you attribute it?"

"I don't know. Probably it is due to a variety of causes. If I did not know how little influence legislation actually has upon industry I should say that the tariff was the chief cause; but I don't know that it is."

"The price of cotton averaged very low last year," I said; "has that had anything to do with it?"

"Of course that cut down the income from the crop of last year; but the depression I speak of did not begin recently, and the price of cotton has been good as a rule."

"One cause is probably the wearing out of our lands. You know that all agricultural lands produce less and less except they are constantly renewed by fertilizers, and our people are too poor to buy those. The increased aggregate crop is due to increased acreage, but we have not been able to increase the former in the same proportion that we have increased the latter and the amount of labor expended. We work over more ground and more hands are employed, but it costs more to make a bale of cotton now than it formerly did."

"Another reason, I think, why we do not

raise as much cotton to an acre as we formerly did, is that we don't get what we call as good a 'stand' as we used to. The importance of this is not likely to be appreciated by one who has never lived where cotton is raised. If there are many long, vacant spaces in the rows of cotton plants, they may grow very thrifty, and the field, as one looks over it, may appear to bear a great crop, and yet, when the cotton comes to be picked, it will turn out light. Now, in order to secure a good 'stand,' that is, to have the ground all occupied, the closest care and attention are necessary at a certain critical period. In former times, when the planter had complete control of the labor, he could enforce this care and attention as he cannot do now. The cotton lands of the South are now mostly rented to the negroes, and if the owner retains an interest in the crop he has no voice in the manner in which it shall be worked. If he should interfere, the negroes would resent it and leave. There is a great deal of careless farming in the South."

On the receipt of this remarkable deliverance, which is fraught with facts corroborative of my own economic views, and of protectionist doctrine as expounded by Henry Clay, Frederick List, Stephen Colwell, Henry C. Carey, Wm. Elder, John L. Hayes, James M. Swank, and most French and German economists, I mailed it to a correspondent whom I have for years regarded as more precisely familiar with the details and scope of Southern production and trade than any man in that section of whom I have knowledge. I submit the following from his reply, which was dated July 16th:

I wish to say a word relative to the increase of cotton cultivation as a measure of prosperity, suggested by the statement in Secretary Lamar's interview, that the population of the cotton States had increased 50 per cent. between 1860 and 1880, and that cotton had only increased 25 per cent.

The statement that such increase as 25 per cent. between 1859 and 1879 is substantially correct, though the crop of 1880 was large compared with preceding crops. It is also true that in the past seven years the increase has been 14 per cent. But it does not follow that the crop should increase with the population. It is the consumption of the world, and not the increase of population in the Southern States, that dictates the size of the cotton crop. And here is cause for serious reflection, for the population of the South has already advanced far beyond the ability of the cotton industry to support it. Not counting Virginia, ten cotton States contained a population of 11,477,691. The value of the cotton crop marketed that year, was \$318,756,673, or \$27.77 for each individual of the population.

"As agriculture is almost our only industry, and as cotton is our principal product," and as the value of this production in 1880 was only \$27.77 per head, it follows that consumption cannot be very lavish or accumulation very rapid upon an average allowance of about \$189 per family. This presents in a nutshell the question of agricultural prosperity in the South. There is nothing mysterious in it; there is no oppression in it; the only trouble is, there is not enough money in it. There must be more work, and more production to make more money—production in diversified agriculture, in mining and manufacturing.

The prevalent "depression" which did not begin recently, "the wearing out of arable lands, the lack of money to buy fertilizers, the general 'want of capital,' are all results of one cause—the enforced idleness of large numbers of people, white and black; enforced by limitations of custom, the disabilities of primitive industrial training, the inability to strike out on untrodden lines of effort. "No capital" is the great stumbling block, but money will be abundant anywhere with persistent labor behind it. The South is languishing under bondage to an industrial fallacy, the misfidence and sufficiency of cotton as the sole source of rural prosperity, and would grow poorer and poorer by longer submitting to such vassalage.

As a matter of fact, however, the cotton States have already more wealth than at any former period; more results of "dried labor," more factories and workshops, more railroads and public improvements, better houses and more furniture, as a result of the local efforts for diversification; it has less debt for advances on crops, fewer mortgages on farm property, and less dependence on the West for corn and bacon, and on the East for cotton goods. At

\*Idem, page 116.



the same time, it has more incorporated capital and more available money for investment. The feeling of depression is a reaction from the unrest of the industrial awakening, and while it is real enough, it is slowly disappearing.

The South has marvellous advantages, and persistent and plucky men for leaders in the industrial movement, and can get special skill and money from outside, and rapidly develop skill in the body of its native labor. It has been too deep in the cotton rut to get easily out of it to make a beginning, but once fairly out, industrial development can only be delayed by extraneous and unnecessary causes.

In 1884 there came from the press of the American News Co. an invaluable little volume entitled "*Farm and Factory; Aids to Agriculture from other Industries*," which, with its instructive statistical appendices, embraces but 128 pages, and is sold at 25 cents per copy. Not to refer to this brochure of Mr. J. R. Dodge, the statistician of the Agricultural Department, would be to withhold from Mr. Lamar an easy reference to precise and ample statistics which elucidate problems that are giving him anxiety; and from his fellow-citizens a crowded magazine of facts confirming the justice of their confidence in the belief that riches and prosperity will be found throughout the South when mineral and manufacturing development shall have constrained her farmers to diversify their crops and look to their flocks, herds and barn-yards, and to the rotation of crops for fertilizers that will give vitality and market value to their moribund cotton fields. It is also due to the author that I should thus publicly acknowledge in advance my indebtedness to him for statements I may be tempted to quote without special acknowledgment.

An acre of farm land in Connecticut, whose manufactures are so widely diversified that but eighteen in every hundred of her people were then getting their living by labor on the land, is shown by the last census to be worth \$49.34, while an acre of better farm land in Alabama, 77 per cent. of whose people were engaged in agriculture, was worth but \$4.19.

In New Jersey, to whose fields the myriads of non-agricultural laborers of Philadelphia and New York look for many of their table supplies, and the average value of whose farm land was \$65.16 per acre, but 15 per cent. of the people were employed in agriculture. The following is one of several comparative statements which were carefully compiled by Mr. Dodge from the report of the census of 1880, which together establish and account for the appalling difference in the value of farm land in manufacturing and non-manufacturing States. A represents the number of acres in farms, B the value of farms, C value per acre, D per cent. of workers in agriculture:

States.	A.	B.	C.	D.
Georgia.....	26,043,382	\$111,910,540	\$4.30	72
North Carolina..	22,363,558	135,793,602	6.07	75
South Carolina..	13,457,613	68,677,482	5.10	75
Alabama.....	18,855,334	78,954,548	4.19	77
Mississippi.....	12,855,468	52,844,913	4.12	82
Arkansas.....	22,065,547	74,449,555	3.36	83
Total.....	101,636,796	\$562,430,848	\$5.18	77

The story of lands without buyers and farms at nominal valuations in 1880 is simply told thus: Georgia has 6 per cent. in manufactures; North Carolina has 7 per cent. in manufactures; South Carolina has 5 per cent. in manufactures; Alabama has 5 per cent. in manufactures; Mississippi has 3 per cent. in manufactures; Arkansas has 4 per cent. in manufactures.

But, leaving those who desire to know more of Mr. Dodge's statistics to study them in his little volume, I recur to my personal observations. During my first visit to Anniston I observed the arrival each morning of numbers of wagons, most of which were freighted with a bale or two bales of cotton, but upon a small number of which were three bales. The teams that drew these vehicles were motly and sometimes grotesque, being a mule, an ox, a horse, a bull, a cow, or a combination of any two of these animals. The driver was in each instance a man who had with him

a woman, and was sometimes accompanied by two or three women. My attention having been attracted by these daily processions, which moved with much solemnity, I learned that they were made up of farmers who were accompanied by wife or daughter, or by wife and daughter, or probably, in the instances in which there were three women in the party, by wife, daughter and a daughter-in-law who had her home with her husband's family. The object of the mission was the sale of the one cash-producing crop of the family and the farm on which they lived, and the "laying in" of the family's annual supply of store goods. The pilgrimage was not expensive, as each party brought its own supplies, and long open sheds lined one side of a lot adjoining what in courtesy might be called the cotton exchange, into which the wagons were driven, and in which they might remain a reasonable time without charge.

To sell the cotton was a simple operation. The price is fixed and known, and the scales are notoriously honest. It is therefore a mere question of weight and computation. The price in December of such cotton as these people had produced was eight cents per pound, and the bales were expected to average about 500 pounds. Here we have the elements from which we may calculate the annual commercial value to the State and country of these families of poor white Southern farmers, whose allegiance to King Cotton is still as loyal and subservient as it was when his sceptre swayed the affairs of the Union.

The first business of the day was to dispose of the crop and to receive its value in cash. While this operation went on teams thronged the avenue to the cotton market, and when it was closed, they were to be found blocking the broad roadway of Noble street, in front of the stores that line its sides for a couple of blocks. Of course these humble, honest and orderly people, for such they are, though constituting a typical and very numerous class of cotton planters, do not represent the owners of the great plantations, the exclusive production of cotton on which, by the artless and wasteful methods of the past, is consuming the life and substance of their owners, who, in the halcyon days of the New South, will probably be regarded as having constituted one of Dr. Oliver Wendell Holmes's provisional races.

It was my privilege to find among the guests of the Inn Mr. Matthew Addy, of Cincinnati, whose technical and historical library of works on iron and cognate topics is known to mining and mechanical engineers and metallurgists throughout the country. In charge of Messrs. Samuel and George Noble, a party including among others Mr. Addy and Mr. Randall, the newly installed and brilliant editor of the Hot Blast, we left the station of the Anniston & Atlantic Railroad to examine an immense deposit of brown hematite ore which is among the reserve resources of the Clifton Iron Co. Farmers were busy planting or preparing to plant. Noticing, with an expression of surprise, the smallness of the mule and the lightness of the plough with which a man was scratching the surface of a field, I was told that if I interrogated the farmer on the point I would hear that a heavier plough would lessen the probability of getting a crop, and that as a small mule consumed less food than a large one and could do the work required as well, good farming required the use of the one that would consume the least food. My incredulity evidently found silent expression, for Mr. George Noble, who is something of a wag, appealed to other members of the party for confirmation of his statement. While seeming to assent, I resolved to test by future observation what seemed to be so incredible a story. The valley through which the Anniston & Atlantic Railroad runs

is more than sixty miles long, and is known in parts as Chinnabee, Talladega and Syl-lacuga valleys, and the hills along the south side constitute for about sixty miles an almost unbroken line of immense deposits of iron ore. On the north side much of the land is under cultivation, but, so far as that morning's observation went, not on the light plough and little mule theory. On the contrary, the fine horses and teams of noble oxen, between which the several kinds of work in progress were divided, would challenge admiration if seen on the best farms of Lancaster county, Pennsylvania. They were on the farm of Mr. Hugh McElderry, with whom I was soon to become pleasantly acquainted, and a brief letter from whom will shortly tell my readers something about the details and results of farming in Chinnabee valley. The adjoining farm was also under high cultivation. A curiously illustrative story attaches to this farm; it was part of the estate of the owner of the heavily wooded hill, to inspect whose vast stores of hematite ore was the especial object of our excursion. The mineral lands were "too rough and rocky" for cultivation, and to make cotton so far from navigable water, on which it could be floated to market in a flat boat, or in the absence of a railroad, would no longer pay, and the whole estate was therefore sold at low figures to the Clifton Iron Co., from which company the vendor now finds large annual profit in the leasing non-mineral portion of his former estate at a rental which gives the company a good rate of interest on the entire purchase money. Nor does the good man repine over the existing state of affairs, as he now clears annually from his leased but well cultivated farm more than he ever made off his whole estate before the Anniston & Atlantic Railroad had been laid through the valley, and the growing non-agricultural laboring population of Iron-aton and Jenifer, the Clifton Co's furnace towns, and the rapidly augmenting population of Anniston and its suburbs, Oxford and Oxanana, gave him a quick and remunerative market for all the secondary products of the farm. The following note from Mr. McElderry may be accepted as speaking generally for his neighbor, Mr. Jones, as well as in detail for its author:

McELDERRY, ALA., May 31, 1887.

HON. WM. D. KELLEY:

My Dear Sir—Your favor of the 27th just to hand. I take pleasure in answering your questions so far as is in my power.

My place is located in Chinnabee valley, Talladega county, Ala. It was the dwelling place and now is the resting place of Chinnabee Chief, the friendly Indian who succeeded in doing much service to the whites during the Creek war of 1812-14. My place consists of 1,280 acres, and is divided as follows: 600 acres in cultivation and 680 in fine timber land.

Of the land in cultivation I have 220 acres in cotton, 190 corn, 120 wheat and oats, 10 in rye, 10 in truck patches, and 50 in clover, orchard and blue-grass.

My woodland furnishes native pasturage for cattle and mule colts from May to December. I raise my own hog meat, and have Jersey cows and mule colts for sale. For manure I depend on ground cotton seed, acid phosphate and stable manure mixed. This compost surpasses any guano.

The Anniston & Atlantic Railroad traverses Chinnabee valley a distance of five miles and Talladega valley a distance of twenty miles. Under the influence of drainage, deep turning and thorough but shallow cultivation, these lands are showing marked improvement in production. So great has been this improvement that the Talladega county farmers last year took the highest premium for the best display at the State Fair. These valleys will produce almost any kind of truck or staple crop, and under the beneficent effects of a home market will inevitably make their owners rich. Indeed, already there are many fresh signs of prosperity. My wish for you is a long life and much happiness.

HUGH McELDERRY.

I have been asked whether I was kindly received by the people generally of the cities and towns I visited, and if

I always felt free to express my opinions as pointedly and unqualifiedly as I habitually express them to my constituents. Now, when entering upon an account of visits to communities to which I was personally a stranger, though many of their members had known me by reputation, and at one time held in abhorrence my opinions on political and economic questions, seems to be an appropriate time to say that, when speaking to audiences made up of people of every shade of opinion, at Chattanooga, Birmingham and Anniston during my first trip, and at Rome, Georgia, and Talladega, Alabama, more recently, and in social intercourse at Cedartown, Georgia, Rome, Talladega, and other places at which large numbers of people met me in social intercourse, I expressed, without rebuke or harsh criticism, my convictions as unreservedly as I could have done to my most sympathetic friend. This fact may possibly be corroborated by some of my future statements.

Capt. N. G. West, a whilom constituent of mine, is practically the founder of Cedartown as it is, though a small settlement may have been effected before his advent. His account of the purchase of a site for the Cherokee furnace and large bodies of ore and timber land, which are within the limits of or contiguous to Cedartown, recalls the story of the sale and the subsequent occupancy as a tenant of part of the Jones estate at Chinnabee. The breaking out of the war found Capt. West in the employ of a great corporation at Richmond, Virginia. A few weeks later he was in charge of a department of Colt's famous rifle and pistol works, at Hartford, Connecticut. After the war had closed he moved to Philadelphia and connected himself with one of the great establishments of the fifteenth ward. While here he was moved to aid in developing the mineral region of the South, and became part owner and manager of the famous Shelby mines and furnaces. Having received a satisfactory offer for his interest at Shelby he sold it, and as a result of much personal exploration determined to settle in Georgia, on the elevated plateau that is drained by the Big Cedar creek, if he could procure adequate bodies of ore and timber land at satisfactory prices. The successful accomplishment of such an enterprise at that time could only be effected by securing an optional right to take within a fixed time the property described at a fixed price in "the option." The tract which determined Capt. West's location, and which must be had as a preliminary purchase, was a large one, the arable acres of which surrounded immense ore hills, from which moss-grown boulders of iron ore protruded. While negotiating the purchase the captain admitted the native fertility and value of the level land, but called attention to the size, number and broken surface of the hills. "Yes," said the owner, "the hills are big and rough, and you can't make crops on them, but I took that into account when I set the price on the farm. If all the land had been fit for farming it would have taken a good deal more money to pay for it." The purchase was promptly concluded, as the price demanded was in reality little more than nominal.

It is not often that Pennsylvanians hear of farms selling at reduced rates per acre by reason of the presence upon them of practically inexhaustible deposits of high-grade iron ore, yet I heard of many well authenticated cases of the kind in Alabama and Georgia. But it is due to the New South to say that repetitions of this kind of folly are not likely to occur frequently in its rapidly expanding limits.

Having determined sites for a first-class furnace for the production of charcoal iron, of ovens for the making of the coal, for a flouring mill and elevator on the banks of



Cedar creek, to be run by the power of the

"Sleepy pool above the dam,  
The pool beneath it never still,"

and for a capacious and imposing building for offices, a country store and other purposes, and the dedication of land for several wide thoroughfares on lines in harmony with an improved town plan, Capt. West prepared for the improvement and cultivation of his farm. His report of the effect his preparatory measures produced upon the former owner of the land and his cotton growing neighbors confirmed the prevalence in the vicinity of Cedartown of the light plough and small mule theory, and would have seemed ludicrous had it not been so sad. His heavy chilled ploughs, subsoil ploughs with which to follow them, large oxen and horses, and all other needed instrumentalities, each of perfect construction, alarmed his so-called agricultural neighbors.

Friendly whispers came from the man whose means had diminished annually in spite of the labor he and his family had bestowed upon the farm which poverty had at length compelled him to sell that such heavy teams and ploughs would be worse than out of place on that land; that to disturb the soil to a greater depth than four inches would be dangerous, and the use of such heavy ploughs, and of subsoil ploughs after them, would be ruinous. Owners of contiguous farms were more outspoken and demonstrative. They not only advised the newcomer, who, though they did not know it, held options upon the farms of several of them, to confine his attention to iron-making until observation could show him that such deep ploughing as he proposed would more than impair, would actually destroy the fertility of the soil, or reduce it to such a condition that it could recover but by "a fallow" of twenty or thirty years duration. Happily for Capt. West, he had been an inquiring observer of the agricultural methods of Connecticut and Pennsylvania, and believed that his personal interests and his duty to the well-meaning, honest, but ignorant people among whom he was casting his lot required him to make the earliest practicable demonstration of the boundless stores of wealth that shallow ploughing had hoarded in the exhausted cotton fields of Georgia. Having put his draft animals and heavy implements into skillful hands, he set matters in motion with the view to proving the capacity of the fields as they were when he bought them to yield without fresh fertilizing remunerative crops of wheat, corn, oats, potatoes, orchard fruits, clover, and other grasses and plants. His first year's wheat crop was at the rate of twenty-six bushels to the acre, and the other crops did about as well. Believing that no farm should be devoted to cotton exclusively, and that agriculture, like manufactures, should be as widely diversified as practicable, he occasionally plants a field in which clover has just been turned under, in order to show old time planters who visit Cedartown how perfect "a stand" cotton makes on land which, though it has not for many years tasted an imported fertilizer, has been fattened by turning back upon it its own nutritious green crop.

Cedartown is the county town of Polk county, in the northwestern part of Georgia, a short distance from the Alabama line. In the days of which I have written it had no railroad connections. It is now the point at which the East and West road, by which Gainesville, Georgia, and Birmingham, Alabama, are connected, and the Rome and Carrollton roads cross, and has easy connections with immense deposits of red and brown hematite ore and manganese, and with at least one available deposit of magnetic ore at Cartersville, and with vast quarries of many varieties of marble and of slate of equal quality with that derived from the quarries of the Lehigh

Valley, Pennsylvania. I shall always regret that I had appropriated but one day to this interesting point of study, and that other engagements prevented an extension of the time. It was about the middle of April, and the capacious and elegant home of our host was shaded by flowering trees, whose blossoms breathed delicious odors, among which I need hardly say were fine specimens of the stately magnolia.

In the evening our hostess threw open the spacious ground floor of the mansion, and thus enabled us to meet many of the ladies and gentlemen of the vicinity. The eager desire of these energetic, hopeful and courteous people to ascertain the arguments by which the man, whom they had till recently regarded as the great apostle of a system of oppressive sectional taxation, which had reduced the Southern people to the condition of hewers of wood and drawers of water for the princely monopolists of the North, would attempt to legitimate his opinions, imparted to the occasion the character of a scientific conversation rather than that of a social reception. Nor was their interest lessened by my assurance that I advocated the maintenance of a highly protective tariff, in the hope of enabling and inducing the people of the South to compete with Pennsylvania in the production of all her mineral specialties, by availing themselves of the vast riches that existed in their coal and ore beds, and, by the diversification of their crops, to so reduce the annual crop of cotton as to make the North pay more for its material for cotton cloth. That the protective system was susceptible of such a gloss appeared to be a revelation to some of my hearers. Yet, when I propounded the question, would not the survivors get better prices for their cotton and have more favorable prospects for higher prices next year if the men who are to raise one-fifth of this year's crop should be found dead in the morning, and their grief-stricken families should also find that the fields on which their share of the cotton crop was to grow had been stricken with temporary, but for the season absolute, barrenness, the proposition was assented to, because every one present had grieved over the fact that the exclusive devotion of the South to cotton growing had so increased the quantity produced as to have reduced the price in local markets to a point that did not repay the cost of production.

Two at least, and I think more of my interlocutors, notwithstanding the improved condition and increasing intelligence of the masses of the people, sorrowed keenly over the departure of the slave owning, cotton growing, patriarchal days of the Old South; yet even they would have told my friend Lamar that, had the production of cotton increased *pari passu* with the increase of population, as he thinks it should have done, it would have not merely overwhelmed the market, but would have reduced to destitution every planter of the South. That the diversification of the crops and of the employments of her people were a prerequisite to the prosperity of that section of the country was universally admitted. Nor were any of my auditors shocked or offended by the statement that my observation of cotton movements at Anniston had shown me that one young negro, having abandoned plantation life and gone to work in a furnace, foundry, mine or other non-agricultural employment, was worth more commercially to the city or State than were three of the cotton-growing families, whose productions consisted of from one to five bales of cotton, a little corn for domestic use, and a few "razor-back" pigs, whether his value were measured by the value of his labor to others as shown by his wages, or by the amount he was able to spend in the purchase of needed productions of the labor of other men.

These wholesome truths had been demonstrated to every resident of the vicinity by Capt. West in conducting the business of the Cherokee furnace. His example and friendly offices, even to the extent of the loan of implements, had promoted a diversification of crops and the better fencing and cultivation of fields. As we had closed our inspection of the furnace a number of wagons were discharging the last load of ore they would bring that day. Supposing that they were the property of the company and were in charge of a corps of steadily employed teamsters, I congratulated Capt. West on the size and condition of his animals, and was told that they were the property of the drivers, most of whom made more money by hauling "rocks" from the "rough hills" on their farms at a fixed price per ton than they had ever been able to make by growing cotton. Every one of them, said the Captain, raises wheat, corn, oats, clover, and fodder plants adapted to the climate, and knows that the way to fertilize his land is to care well for his stock and apply the accumulations of the barn-yard. By such practical means has my former constituent, in managing the affairs of a single furnace, revolutionized the agricultural methods and improved the pecuniary and social condition of the people of a wide vicinage, which is remarkable for its beauty and its wealth of agricultural and mineral elements.

In the morning a number of gentlemen proposed a ride, in the course of which we should visit some of the openings of ore made on their own farms by the thrifty teamsters of whom I have just spoken. One of these openings proved to be into a veritable mountain of brown hematite ore. Yet I heard no talk of booming Cedartown by promising more furnaces. The reported population of the town is 3,000, including the bar and county officers, and the desire of all its citizens with whom I conversed appeared to be to build up the town by making it a seat of minor industries, such as would bring together a prosperous population of mechanics and artisans. This aim is practical. If it be attained additional furnaces will rise in response to demands for their output for consumption in the foundries and factories of a prosperous town. By an irrevocable law the value per acre of adjacent farms will increase with the number of mechanics and non-agricultural laborers employed in the town. Of course, this law applies to wage-earning laborers, and not to convicts leased by the State, of whom I am sorry to say, about 100 are employed by the Cherokee Furnace Company. The leasing of its convicts by a State is a barbarism against which humanity revolts, and for the prevention of which honest laborers should everywhere combine.

I addressed as many of the citizens of the city of Talladega as could be accommodated in the county court-room on the evening of April 21, on the means of developing the resources of the South. My visit to Talladega and the heartiness of my reception by her citizens were surprises to me. I had never to my knowledge met one of her people except at the social board nine days before, when citizens of Anniston and its vicinity marked the seventy-third anniversary of my birth by a reception and banquet at the Inn. The invitation to visit Talladega came from the leading men of the city and was presented and enforced by Capt. Thos. F. Plowman, Chairman of the Democratic Committee of Talladega county. Many of my Anniston friends supported Capt. Plowman's appeal, and though I had declined several complimentary invitations I was persuaded to accept this one.

My party consisted of Mr. George Noble, Mr. J. D. Kase of Danville, Pa., and myself. Carriages awaited us at the Talladega station and we were driven around the city and environs before proceeding to our

quarters. The natural beauty of the situation is very great, the evidence of wealth, taste and liberality shown in public buildings and private residences, through the beautiful grounds of some of which we were driven, do much to heighten the beauty of the scene. While at tea I was told that my audience would be made up entirely of partisan Democrats. But after entering the building I learned that I would speak to one very intelligent Republican, the colored janitor of the building. For the edification of those who are eager to know how such an audience would treat my opinions I may say with truth that I never expressed myself with more freedom, and will add that my Republican auditor described the temper of the occasion by saying that "he didn't know whether Judge Kelley had got the Democrats or the Democrats got the Judge; but there was no difference between them when he was done speaking."

At the station I had been put in charge of the mayor of the city, Wm. H. Skaggs. This gentleman, who has been mayor since April, 1885, and is president of a bank and a leading spirit in every local enterprise, is by common consent credited with having created ample water-works, and a volunteer fire department of rare efficiency, and with the establishment of common schools, is now just about 27 years of age. Of the school buildings which owe their existence to his efforts I saw but one. It is two stories high, 90 feet deep and 70 feet wide, and will in its eight rooms accommodate 480 scholars. He disclaimed the desire for an artificial boom for the city, which is the county seat and the commercial center of an agricultural population that is rapidly increasing in numbers, intelligence and prosperity. In this connection he referred to guano as the curse of the South to which she was greatly indebted for the poverty of her people and the exhaustion of her soil.

He sees that, located as the city is, in the great brown hematite fields of the Talladega valley, in which are the Ironaton and Jenifer charcoal furnaces of the Clifton company, that the natural development of the country will force her into the position of an iron-making center; but his present endeavor is to secure the establishment of such minor industries as are required to supply the wants of a prosperous farming community and furnish a market for the incidental but most profitable productions of suburban farms. This interview with Mayor Skaggs was most opportune, as it enabled me to illustrate my argument by reference to local incidents or to the experience of some of my auditors. It being apparent that the speaker and his audience were in sympathy I continued to speak about two hours, and was gratified by the frequency with which I heard subsequent expressions of regret that I had not spoken longer.

I was introduced to the meeting by John B. Knox, Esq., whom I had more than once heard described as the ablest lawyer in Northern Alabama. Soon after the meeting closed I left with Mr. Knox, to whose office we repaired, and we were joined by nearly a score of others, and in the enjoyment of some of the good things of this world passed nearly two hours in animated conversation. Mr. Knox is still a young man, and I owe it to him to say that, among the many surprises which I encountered in Alabama, was the finding of so extensive and well-chosen a law library in the possession of any one of my professional brethren.

As I must leave about noon the next day an early breakfast awaited a number of gentlemen who proposed to accompany me to the State institutions for the blind and mute, which occupy a magnificent site in the same enclosure. In the latter institution I found a young constituent, Miss Mary Brown, of West Philadelphia, who is the honored chief of the department of



oral instruction, by which those who have never heard a sound are taught to converse freely. The legislature at its last session appropriated means for establishing separate buildings for the blind, in order that both classes of unfortunates may be more fully provided for. We also visited Talladega College, in the class-rooms of which we found 321 pupils, representing the best elements of the colored population of 8 States and 24 of the counties of Alabama. This institution is a primary school, a normal school and a Congregational theological seminary. As neither time nor space will permit me to say what I would like to say of this college and its management, I present the following historical sketch taken from its 17th annual catalogue:

The American Missionary Association began a school in Talladega twenty years ago. In 1867 a large and stately building erected for college use, 1852-3, was purchased with several acres of land, and a primary school opened that autumn with more than 100 pupils in attendance. The building is called Swayne Hall, in honor of General Wager Swayne, of the Freedmen's Bureau, by whom the purchase was made. In 1868 a church was organized, and in 1869 the corner stone of a girl's hall, accommodating also the boarding department, was laid, and the building named after Rev. L. Foster, of Blue Island, Ill., a principal donor. In 1873, by the gift of Mr. R. R. Graves, of Morristown, N. J., a two-story wooden house and six acres of valuable land were secured for the theological department. Winsted farm, of 100 acres, less than a mile from the college buildings, was bought in 1877, mainly by Connecticut donors. Stone Hall, for the use of young men, built in 1881, is the gift of Mrs. Valeria G. Stone, of Malden, Mass. The same year the other brick halls, Swayne and Foster, were thoroughly repaired, a new house was built for the president, and the following year two other houses, one the gift of Mr. Seth Wadhams, of Chicago, were secured, and are occupied by instructors. In 1883, by the contribution of Mr. J. N. Cassedy, of Thiels, N. Y., a two-story school house was erected for primary and intermediate pupils. In 1884, through aid from the "John F. Slater Fund," a commodious shop was built, so that now, besides two school buildings, a hall for young women, another for young men, and four dwellings for teachers, the college has in lands, barns and shops valuable appliances for teaching industry. The college is Christian and evangelical, though not sectarian. It is not a "reform school," and none but the worthy are tolerated. It aims at thoroughness, and seeks to cultivate the hand, the head and the heart.

The population of Talladega county is about 25,000 exclusive of the city, which has from 3,000 to 5,000. Their railroads traverse great fields of hematite ore, and it is claimed that deposits of magnetic ore and red hematite and of manganese are easily accessible. It is this county that sent from one of its marble quarries as its contribution to the Washington Monument a block which was refused, "as it was evidently choice Italian stone," and it may truly be said to abound in marble of almost every color and character. Gold mines are also worked on Talladega creek by Messrs. J. B. Woodward and F. A. Gernoh. But immense as is the mineral wealth of Alabama, her forests and farming lands will prove to be her chief source of wealth. Speaking for the county, the editor of *Our Mountain Home* says:

"But agriculture is one of our chief industries. Its productions take a broad range since we are almost under the tropics, and possess all the soils, black, dark, red, gray, white and sandy, and every elevation between 500 and 3,000 feet above the level of the sea. Cotton, corn, oats, wheat, rye, sugar cane, the millets, the vines—peas, beans, Irish and sweet potatoes, melons, pumpkins, etc. Clover and the grasses form the principal crops. Rice, barley, broom corn, tobacco, hemp, flax and indigo are also grown successfully. Orchard, garden and wild fruits are bountiful and luscious.

Almost every tropical flower flourishes here in the open air during at least six months of the year in all their native beauty. The margin of the streams in spring are lined with blossoming and

fragrant trees. Our forests in the warm weather are variegated with a thousand different hues. The species are indigenous; wild flowers are innumerable.

Old methods of farming are rapidly receding in favor of new modes and appliances. The acreage per horse is being reduced, new implements introduced and several farms in the county are cultivated like gardens. The great advantage of this style over the old are soon apparent in increased yields and superior quality of the crops gathered.

Orchard or garden fruits are constantly improved or supplanted by those especially adapted to this climate and each particular soil. The best varieties can scarcely be obtained from a foreign nursery since the ones suited to one section are entirely unsuited to another which is under different influences.

The complete revolution of the farming systems is working a corresponding revolution in other directions. More attention is paid every year to stock raising and the grasses. Fine breeds and grades of horses, cattle and poultry are frequently seen. Excellent pastures and fields of millet, clover and the grasses are getting to be prominent features of the plantations of our large farmers."

Thus Talladega enforces the lesson taught by Cedartown—that the prosperity of the South does not depend on her monopoly of cotton growing or her wondrous mineral deposits, but on the harmonious development of these deposits with all forms of manufacturing industry, and the skillful cultivation of the manifold varieties of crops with which her land responds remuneratively to the labor of intelligent farmers.

But the experience of Rome, Georgia, enforces the same truth with still greater emphasis. It was in compliance with an invitation from the Board of Trade of Rome to visit that city and address her people in the Opera House that I passed the last three days of April in that most picturesque and thriving city. The determining fact in inducing me to accept this invitation after declining so many others was that it embraced my friend and host, Mr. Samuel Noble, who about seventeen years before, when depressed by a series of local discouragements, had abandoned his interests in the foundry and machine shop of Noble & Sons, and with General Daniel Tyler had gone forth to establish iron works, and as events have proven to found in the scarcely broken forests of Northwestern Alabama a city, the unparalleled prosperity of whose people enhances the grandeur of the monument to each other, whose foundations they then laid.

Unhappily, the condition of Mr. Noble's health prevented him from accompanying me as he had expected to do. The country around Rome is beautifully undulating, and the three rivers, the Ettowa, the Oostanaula and the Coosa, which is formed by the confluence of the others, flow through bottoms so far below the city level, and at many points so broad and finely wooded with a variety of stately trees, as to greatly increase the picturesque of the situation. Though my invitation had come from the Board of Trade, I was personally the guest of Mr. T. F. Howell, whose former business, that of cotton factor, had required him to make annual visits to leading manufacturing towns of Pennsylvania, New York and New England. He is still a young man, but an active participant in all public or corporate movements for the advancement of the interests of his city and State. The three days I passed under his roof showed me that the doors of his city home are always open to his fellow citizens, many of whom called during my first evening. Among these were two gentlemen of lineage, both of whom are thoroughly well bred, but evidently regard the New South as an intrusive upstart, who can add nothing to the glory or real prosperity of the historic South. I mention this fact because the evening was spent in animated conversation, and having come early these gentlemen were among the last to leave.

We were not far from the home of General Wofford, whose name invoked expressions of respect from all who spoke of him, and I thought it not inappropriate to refer here, in the Ettowa valley, to his statement of the recent and accidental addition of clover to its crops. One of these gentlemen thought he had seen fields of clover before the war, but his appeal for corroboration led to the confirmation of General Wofford's statement. So, too, when I referred to the wretched poverty of the "one gallow farmers," whose year's work results in but one or two \$40 bales of cotton, and to the grotesque establishments by which I had seen them bring their crop to market during the preceding November, the same gentleman was sure some evil disposed person had been practicing upon my credulity. It was, he said, impossible that such people could grow any considerable portion of the South's magnificent crop of cotton. My response was definite but courteous and free from emphasis. My eyes had been my witnesses, and they were not given to such gross deception; and though such people could not produce a large percentage of the entire crop, they were numerically a very appreciable percentage of the whole number of cotton growers. On the points thus raised the judgment of the company appeared to be that the unfortunate class of farmers to whom I had referred are not frequently found in the immediate vicinity of cities, in which growing industries enable men to find employment at which regular wages can be earned, but that in the cotton raising sections of the country, away from such seats of industrial activity, they were unhappily a very heavy percentage of the total number of cotton growers.

At the appointed hour on the next evening the Opera House was well filled with an audience representative of Rome's best citizens, among whom I was pleased to see a number of ladies. As Mr. Noble could not appear among his former townsmen as had been expected the whole evening was before me, and I was not at a loss for topics that would bear elucidation. After paying a just tribute to my friend Noble, who had gone from their midst to found a city more perfect in its primitive appointments and in arrangements for expansion by the extension of its original plan than Penn's city on the Delaware had been I passed to the consideration of industrial questions, by remarking that days spent in unremunerative labor were a waste of human life with all its capabilities and aspirations. This I said was the lot of all people whose government failed to secure a wide diversification of employments, by making it the interest of each citizen to strive for profit in the production of that which would satisfy current wants or gratify laudable desires of some of his countrymen. This had been the inevitable lot of the producing classes of the cotton States until the inauguration of the New South. The census taken in June, 1880, had ascertained the fact that of the producers of Georgia 72 per cent. were engaged in the same pursuit, agriculture, which then meant the growing of cotton, and that 77 per cent. of those in Alabama were engaged in the same pursuit. As all were employed in producing the same commodity, there was no opportunity for the profitable exchange of services between people of these States. But more deplorable, if possible, than this, was, in my judgment, the fact that the crop to which all these people were devoting their land and labor was fibrous, was largely intended for export to foreign markets, and, as it was not consumed as food by man or beast, could make no return to the land, the vital elements of which were absorbed in its growth. I heard no dissent among my auditors from the conclusion that such communities must forego many of the commonest conveniences of civilized life,

and sink into ever deepening shadows of poverty. My reader will see that from such premises a wide range of argument and illustration might be adduced, and will not be surprised to hear that I detained my audience more than two hours.

Thus much for my first impressions of social life in Rome, and the freedom of discussion her citizens tolerate in the consideration of grave questions. But what of the city itself? Rome, Georgia, is a very prosperous city of from 12,000 to 15,000 inhabitants. Its location, on the banks of three rivers, and yet among the hills of a rolling country, is phenomenally picturesque. Broad street, on which are its stores and banks, the offices of its insurance, telegraph, express and other companies are found, and on which the heavy teams of clover and grain-growing farmers are seen in numbers, is wide and level, though streets not far distant are quite hilly. The present ambition of her citizens is to localize within her limits as many mechanical industries as possible, especially such as give employment and exceptionally high wages to numbers of workmen. On the morning after my arrival Mr. Howell excused himself from accompanying me, as he had an important conference for nine o'clock. When we met for early dinner I learned that the conference had resulted in a contract for the transfer to Rome of all the shops of one of the most extensive iron bridge building companies of the Northwest. The new site appears to be specially appropriate, as the county was then building bridges across the Ettowa, at the foot of Howard and Broad streets, to connect South and East Rome, and the South is famous for the length and tortuosity of its rivers.

Speaking of railroads in this connection I may use the old proverb that "all roads lead to Rome," for I know of no minor city that is connected by rail with so many local centers of trade and with so many great through lines of road; and her low pressure steamboats, of which I saw several, traverse nearly 800 miles of river. These boats carry large quantities of many kinds of freight. Rome is an historic cotton market and maintains her two compresses, one of which, an 80-inch Morse press, is capable of compressing 60 bales per hour; she has a furniture company, a chair company, and supplies several celebrated plough and tool works and carriage factories with white oak and other woods. Her thirteen jobbing houses handled over \$5,000,000 worth of goods last year, and the business of her retail houses amounted to more than \$4,500,000.

The rates of insurance at Rome, Talladega and Anniston are proverbially low. This is said to be due to the excellence of their respective water works and volunteer fire departments. Indeed, I heard it said at each place that the saving in insurance rates and the security given to property by the supply of water and the force with which it is driven from the fire-plug dispenses with the use of fire engines and more than defrays the cost of the works and the hose and reels of the fire department. The pumping capacity of Rome's works is four times the current demand. She has seven miles of mains, 420 services, 73 city fire-plugs and 7 private ones. The immunity thus guaranteed to life and property is evidently one of the causes of the prosperity and rapid growth of these cities. It is said that the loss by fire in Rome during the last ten years has been less than \$500 per year. A prominent feature among the industries of Rome is a tannery of large dimensions and more than national repute. The hides it tans are selected by the agents of a Connecticut house in our Eastern markets and shipped to Rome. When tanned they are shipped to New Haven or Hartford to be made into the best quality of belting, for which there is a quick demand on both sides of the Atlantic. Another is



the nursery and fruit farm of Mr. G. H. Miller, recently of Ohio. It includes 125 acres and crowns one of the most beautiful hills in the suburbs of the city. Writing of this enterprise in April, Mr. Miller said:

"We are confident that we can grow stock here cheaper than in the North. We can grow here in two years stock that will require three years in the shorter seasons of the North. We selected this point because it is an intermediate climate, and stock grown here is not likely to suffer much from the blizzards of the North or hot weather nearer the Gulf. The soil is well adapted to the purpose. We are planting this year 300,000 fruit trees, 50,000 grape vines and 200,000 peach and plum trees, besides ornamental shrubbery. We are also engaged in fruit growing out on the hillsides. We have put in 30 acres in fruit trees this spring, and will make it 100 acres. We have 10 acres in strawberries and are now shipping to New York."

The morning of Saturday was delicious, and under the guidance of an intelligent friend I loitered through a number of stores on Broad street and chatted with their managers. In this busy part of the city are the rooms of the Rome Land & Improvement Co., in which are finely displayed specimens of the minerals found on the roads or rivers upon which Rome's commerce is carried, and a wonderful display it is of ores and coals and cokes, of clays and stones, of woods, useful or beautiful, and of minerals, including corundum.

In charge of a committee of bright and energetic men, with Mr. James Noble, the venerable father of my Anniston friend, as my immediate companion, I left this geological and mineralogical museum and visited several objects of interest, including Shorter College for young women, the fine buildings of which surmount an eminence from which a magnificent panorama is seen and which makes them conspicuous from all quarters of the city, and including also the water works, of which my venerable companion was the inventor and projector, and which, including engines, boilers, etc., from the works of Noble Bros., at Rome, have been duplicated at Anniston.

In the afternoon we visited the stock and dairy farm of my host, Mr. Howell. It is in the midst of gently rolling fields, and having been made up by selected purchases from three old-time cotton farms, is nearly all cleared land. To supply this deficiency well-located groves have been set out and are thriving. It is watered by a spring, from which 60 gallons per second of water of crystalline purity flow. A summer home of ample dimensions but simple construction, to which the elaborate vegetable and fruit garden is the nearest part of the curtilage, crowns a gently sloping eminence, at the foot of which are grouped at such distance apart as to prevent interference and make inspection easy the barn, stalls, carriage and wagon houses, poultry walks, and all other such appurtenances as are to be seen on the most fully appointed farms in Pennsylvania. The stock upon this beautiful Georgia estate is all choice, but Mr. Howell's pride is evidently his Jersey herd, several head of which he imported directly. It must not be supposed that this is an isolated farm. It is not. It is surrounded by a number, every one of which is an illustration of the magnificent results that certainly follow the practice on Georgia land of the science and art of agriculture. It has been by this process that Rome has been compensated for the loss of half of her annual receipt of cotton. Dairy farming, fruit, vegetable and truck raising in the vicinity of towns like Rome and Talladega, to say nothing of cities of such magnitude and rapid growth as Chattanooga and Birmingham, pay so much better than land owners, to use the words of one of them, "cannot afford to fool away time by growing cotton at eight cents a pound."

I have said that the experience of Rome emphasized this lesson more emphatically than that of either Talladega or Cedartown, and I propose to prove the assertion. In spite of the mechanical genius with which Mr. Noble and his six sons were gifted, of their energy, industry and unity of purpose, and the just celebrity their achievements had given to the shops of Noble & Sons, the cotton trade was the overshadowing factor in the business of Rome. It was the one marketable crop of the surrounding country; it bought in the North food for the laborers who tended the spindles and looms of her factory; it furnished freight for her boats, whether they came from up or down the river, and for her railroads; it gave business, profit and prestige to her bankers and factors, and, as "the borrower is ever the slave of the lender," made them masters of the proud owners of slaves, to whom they made annual advances with which to provide supplies; it paid rent for those vast sheds that from disuse are now falling into decay, and required for its service the expenditure of the capital invested in two great cotton compresses, the business of which afforded detailed proof that Rome's annual receipts of cotton were greater than those of any other city of the same size. Yet so prosperous have the methods of the New South made her people that I did not hear a murmur when reference was made to the fact that in the last seven years these receipts have declined 50 per cent. These are the figures as furnished by Mr. T. L. Robinson, a recognized authority on the question:

	Bales.
1880-81.....	110,000
1881-82.....	83,000
1882-83.....	84,000
1883-84.....	79,000
1884-85.....	63,000
1885-86.....	58,000
1886-87.....	55,000

The increase in population and prosperity of Nashville, Chattanooga, Birmingham, Anniston, South Pittsburg, Cedartown, Talladega and Rome has not been fortuitous; nor was the actual loss of population sustained by Mobile, the inappreciable rate of increase of Charleston and the little more than nominal growth of Savannah and New Orleans during the last decade accidental. All these phenomena occurred in obedience to laws which, though less prompt in action, are as absolute as the law of gravitation. This truth is admirably illustrated by a table showing the number of persons engaged in manufacturing and mining in fifty principal cities, in June, 1890, when the tenth census was taken, together with the proportion in each class of occupation. This table may be studied on page 123 of *Farm and Factory*. Charleston and New Orleans are embraced in the list. The former had but 25 per cent. and the latter but 24 per cent. engaged in manufacturing and mining, and the average for the 50 cities was 43 per cent. I have made vigorous but unavailing efforts to ascertain what per cent. of the people of Mobile and Savannah respectively were then engaged in the specified employments, but from the immutability of the law, we are considering it is safe to conclude that not more than 15 per cent. of the people of Mobile and Savannah were engaged in manufacturing or mining when the tenth census was taken.

With this paper I close my letters on the South. She is in a transitional state. It is idle to dispute or deny the assertion, for the stranger within her borders cannot fail to discover that he moves in the midst of two communities, one of which, animated by hope, is full of impulse and energy, while the other, though the eyes of its members like those of their more hopeful brethren are in their foreheads, look only to the past for guidance and comfort. These constitute the superannuated South which is fading from the earth, and will soon live

not in habit and custom but in tradition alone. The "historic glories," which will forever illuminate the history of the South, belong to a past era in which her statesmen lived upon their farms, were thoroughbred agriculturists, and gave their estates the benefit of all that was then known of the science and art of agriculture. As political philosophers they led the vanguard of the world. In their wilderness homes they idealized governments which were responsive to the highest aspirations of the patriots and philosophers of their time. When, therefore, Virginia's Washington, in obedience to the call of an insurgent Congress abandoned the personal care of his fields, his implements, his stock, and of his account books, journals and correspondence in which his efforts for their improvement are registered, to command an army of undisciplined devotees to chartered freedom, Lafayette, Steuben and Kosciuszko sent, in their names thundering down the ages proof that the war for the independence of the agricultural colonies of America represented the best hopes and aspirations of France; Germany and Poland. But this occurred in a distinct though not a remote epoch—the era which Washington, Jefferson, Madison, Marshall and Henry illustrated, and through which the State of Virginia derived the proud distinction of being called the mother of States and of Presidents. It preceded the invention of the cotton gin and the establishment of the factory system, the baneful influence of which it was that induced the people of the South to substitute cotton growing for agriculture and to look to other regions for supplies of live stock and provisions.

Incalculable as was the infinitely diversified natural wealth of the South, and commanding as was her voice in the councils of the civilized world, she could not resist or modify the disastrous influence of this misguided policy. She proposed to maintain peculiar institutions under which labor should be impelled by other stimulants than the hope of profit, of intellectual improvement, or of social advancement. Isolation of her States and degradation of the great body of her people were unavoidable consequences of her policy. While other States and countries were perfecting and extending their educational systems, and many of them making attendance at school compulsory, she prohibited by degrading penal sanctions the imparting of a knowledge of the rudiments of the English language to millions of her laboring people, and her inadequately endowed institutions of learning were maintained for the benefit of the wealthy few, while the millions of her poor native white citizens sunk into the dangerous mass of servile illiteracy that surrounded them. Tides of invaluable immigrants surged around her borders peopling States whose political power she dreaded but could not counteract as the immigrants shrunk from contact and competition with the ignorance and unrequited labor she maintained throughout her borders. In these hard but self-imposed conditions are found the only philosophic answer to the question put to Mr. Lamar, "How do you account for the apparent stagnation in what were formerly the great commercial centers of the South?" For while she was darkening the minds of her laborers and protecting her borders from innovations of every kind, science, art, invention, exploration and adventure were more busy and persistent than ever before, and the people of other States and countries welcomed all their triumphs as new sources of intelligence, wealth and power.

The terrible results of the mistaken policy of the cotton-growing South are seen in every direction. Not only did the population of Mobile and many other

of her cities and towns decline during the last census decade, and Charleston, Savannah and other places make but inappreciable increase, but all non-agricultural employments seem to have been paralyzed or prohibited. I have in memory a striking illustration of this truth. I have for many years been a member of the Committee on Ways and Means of the National House of Representatives. During the last Congress, among my agreeable associates on that committee were one member from each of the following five Southern States: Arkansas, Georgia, Kentucky, Tennessee and Texas. As the Ways and Means is the committee which more than any other considers the laws that deal most directly and most potently with the productive industries of the people, and as Mr. Speaker Carlisle had not only selected these gentlemen for this committee, but given them when acting together a controlling voice in its councils, I had the curiosity to study the relation of their respective districts to the nation's industries. Among other tests I applied was to ascertain from the report of the census the percentage found in these districts of the total amount of capital and labor employed in non-agricultural industries. The total amount of capital employed in June, 1890, was \$2,790,272,606, and the number of laborers was 2,738,895. The amount of capital employed in these five representative Southern districts was \$9,090,550, making an average for each district of less than one fifteenth of one per cent. of the whole amount, and of laborers the number found was 8,703, averaging to each district a smaller part of the one-fifteenth of one per cent. each. When something more than a year ago I worked out this result from the census returns I was incredulous and doubted the methods I had pursued or the accuracy of my work. I therefore, without mentioning to him my labors and my doubts, handed the official volume containing the elements of the calculation to a statistical expert to make the calculation for me, which he did and confirmed the accuracy of my work, showing that the five districts used less than one-third of one per cent. of the total capital so employed and a slightly smaller percentage of one-third of one per cent. of the number of non-agricultural laborers of the country. There are just five congressional districts in the city of Philadelphia, and it occurred to me to compare the capital and labor employed by these five representative Southern districts with those of the five contiguous Philadelphia districts. The result was that I found these employed \$187,148,859 capital and 185,537 operatives, which showed that the Southern districts employed 4.8 per cent. of Philadelphia's capital and 4.7 per cent. of the number of laborers in her industrial establishments. May we not, without the fear of wounding any just susceptibilities, rejoice audibly over the fact that the gloom and paralysis indicated by the facts I have recalled to the memory of my intelligent readers no longer pervade the richly-endowed, beautiful and once commanding South.

Wealth and honor are in the pathway of the New South. Her impulses are those which are impelling the advance of civilization and the progress of wealth and refinement throughout Christendom; and as her resources, including geographical position and climate, are greater and more diversified than those in the possession of any other people of equal numbers, she must at no distant day break from the thralldom of a misguided past, and resume her once proud position in the van of civilization's advancing column. She is the coming El Dorado of American adventure. May the Almighty speed and guide her onward progress. WM. D. KELLEY.



## Interesting Agricultural and Manufacturing Notes from Mississippi.

[Special correspondence MANUFACTURERS' RECORD.]

ABERDEEN, MISS., August 13, 1887.

Dr. O. R. Blanton, of Greenville, has the most extensive apiary in the Southern States. W. B. Baker, of Hernando, and Major Val Young, of Clay county, are also largely interested in bees and honey. This industry is successfully conducted in many parts of the State.

Some of the most extensive peppermint farms in the South are in Clay county. Two crops of mint a year can be obtained in our State, and the oil ranks high in the market.

The tobacco made by Major M. F. Berry, of Jasper county, is said by experts to afford as fine material for cigars as any imported from Cuba. George Crawford, of Monroe county; T. C. Dockery, of Hernando county; J. N. M. Bradford, of Montgomery county; Mrs. Eggleston, of Holmes county, and W. C. Sumly, of Prentiss county, are among the many producers of choice Mississippi tobacco.

Among the manufacturers of sugar from the Louisiana cane in Mississippi are J. H. Tabor, of Choctaw county; John Evans and Alfred Ladner, of Harrison county, and R. J. Shaw, of Noxuba county. They all made exhibits at the New Orleans Exposition.

There is not a county in the State that cannot boast fine vineyards, and the wines manufactured are of rare excellence and absolute purity.

Robert Brown, of Prairie Station, Monroe county, writes: "A few years ago I devoted 200 acres of my best land to pasturage and stock growing. On this land I have profitably grown stock without trouble or expense. This tract is now heavily sodded with Japanese clover, and I am sure will yield a heavy crop of hay if I take off my stock soon, as I contemplate doing. My hay crop thus far is a splendid one. I have already saved enough to winter all of my stock, with a prospect for a good second mowing on 75 acres just harvested and 200 acres of Japanese clover as yet untouched. I am stocking up my place as fast as I can raise them with cattle, mares and colts, and trust ere long to be able to feed profitably to my stock all the hay that I can grow."

Mr. Brown's report is that of thousands of the farmers of the resurrected South, who are laboring manfully to bring Mississippi up to her *ante bellum* status.

Gloster, in Amite county, is on a boom; three large brick store-houses and a number of substantial dwellings are in course of construction. The railroad is making extensive additions to shipping facilities to accommodate the increasing cotton and lumber business of the town.

N. S. Fort, of Mahew, manufactures and sells at satisfactory prices 100 pounds of butter a week as the product of his herd and dairy.

Messrs. Kamper & Lewin are steadily progressing with the construction of wood alcohol and charcoal works at Laurel, in Jones county. This new industry will give employment to many people.

The Meridian Ice Factory is about to put in machinery that will vastly increase its capacity.

Corinth has a saddle and harness factory that does an immense jobbing business. Its goods are almost the only ones handled in many towns in Mississippi and neighboring States.

The cotton crop of Mississippi was reported by the census as follows:

	Bales.
1850.....	484,399
1860.....	1,800,507
1870.....	364,036
1880.....	963,112
1887.....	1,350,000

The figures for 1887 represent an estimate, of course, as the cotton harvest extends from the 1st of August until Christmas, and

the crop is never entirely safe until picked. But in the hills and sandy lands it may be regarded as secure, and the chances of saving a fine crop off of all characters of soil were never better.

The hay harvest throughout the State has been enormous.

Greenville has organized a Board of Trade. Real estate is advancing in value very rapidly in Greenville and sales are frequent. Greenville has a steam brick factory with a capacity of 25,000 per day.

Jackson has a flourishing commercial college.

Vicksburg has a spoke and hub factory that is doing a brisk business. The supply of splendid timber for the purpose is inexhaustible in the neighborhood and costs no more than fire-wood. The interior of the Vicksburg Opera House is being remodeled.

The Columbus Riflemen have celebrated their fiftieth birthday. The organization was effected in 1837 and has been kept up ever since.

Columbus has a flourishing building and loan association.

The estate of the late Col. Ed. Richardson cultivates over 20,000 acres in cotton in the Delta counties.

Hon. James L. Clemens, one of the representatives in the legislature from Noxubee for the last three terms, has been totally blind for many years.

The building and loan association of Yazoo City is in a flourishing condition.

The following census data in regard to the corn crop of Mississippi may be of interest:

	Bushels.
Crop in 1840.....	13,161,937
Crop in 1850.....	24,446,552
Crop in 1860.....	29,057,682
Crop in 1870.....	15,637,316
Crop in 1880.....	21,340,800
Estimate for 1887.....	30,000,000

The estimate is based upon the fact that the crop is made, and every county in the State reports a surplus. We regard this estimate as a very low one.

There are several extensive silk farms and coconeries in the vicinity of Corinth. Upon one of them, that of Madame Doche, reeling by machinery has been carried on successfully for the last five years, the product finding a market at the highest prices at the Eastern mills.

The manufactory of steam engines, boilers and other machinery is carried on extensively at Corinth, Vicksburg, Jackson, and Moss Point. At the latter town the noted Hand engine is made, which was originally manufactured at Handsboro.

Most of the machinery has been put in position in the Natchez Cotton Mills.

Whitworth Female College, at Brookhaven, ranks fourth in the United States in the number of its pupils, and is not surpassed by any in the thoroughness and efficiency of its training.

The shipments of lumber from the port of Pascagoula, on the south coast of the State, for the week ending August 11, amounted to 1,559,873 feet. Of this amount 243,626 feet went in Russian vessel to Vera Cruz, Mexico; 668,646 feet of lumber and 4,872 white oak staves went in British vessel to Amsterdam, Holland; 346,864 feet was shipped in Russian vessel to Rio Janeiro, Brazil, and 300,737 feet on American vessel to New York.

During the first eleven days of August New Orleans received the following amounts of the products of our south-coast counties by coasting vessels: 1,214,000 feet of lumber, 48,300 barrels of charcoal, 163,000 staves, 100 cords of wood, 76,000 brick, 300 barrels clay, 25,000 laths, 20,000 shingles, 10 bales Spanish moss, 5,000 barrels of sand, 600 barrels of shells, 814 barrels of rosin, 100 barrels of turpentine.

The ship-yards at Pascagoula are doing an extensive business in the repair of vessels. The steamer Alabama, of Mobile, was launched from the ways of P. Blanchard last week, thoroughly overhauled.

The State has a splendid hospital at Vicksburg, which is chiefly used as a refuge

for the sick and maimed passengers and employees of river craft.

Oyster shipping and canning will open lively all along the Mississippi coast next month. The oyster beds are reported to be in fine condition and the business promises to be unusually active this fall and winter.

Columbus, Greenville, Meridian, Macon, Aberdeen, Natchez, Vicksburg, and several other interior cotton markets, received their first bales of cotton of the new crop earlier this year than in any previous season since the war.

Edwards, in Hinds county, has organized a vegetable and fruit growers association. A hundred substantial farmers have agreed to plant from five to twenty acres each next season in fruits and vegetables for the Northern markets.

Meridian has organized a board of trade and cotton exchange.

Aberdeen received her first bale of cotton of the new crop on the 11th inst., which was eight days earlier than the receipt of any new bale in that market since the war. It weighed 609 pounds. It was bought by Gattman & Co. at 11½ cents per pound, and shipped to Hill, Fontaine & Co., of Memphis, being the earliest bale of Mississippi prairie cotton that has reached that city in many years.

The earthwork on the Aberdeen branch of the Kansas City, Memphis and Birmingham Railroad is rapidly approaching completion, and the branch and main line are both expected to be in operation by November. The iron drawbridge for this branch across the Tombigbee at Aberdeen will soon be in place.

The early extension of the Aberdeen branch of the Illinois Central from Aberdeen eastward is expected, but as to whether it will go via Decatur, Sheffield, Chattanooga or Birmingham is a matter of conjecture.

Meridian has added a boiler factory to her other industries.

## A Splendid Offer.

ATHENS, TENN., August 9, 1887.

Editor Manufacturers' Record:

The Athens Mining & Manufacturing Co., at Athens, Tennessee, are now ready to build and will build a railroad to the immense red and brown hematite iron ore fields east of Athens. The company desires to open negotiations at once with capitalists or manufacturing concerns with a view to inducing them to locate upon the property of the company in North Athens. The company will give away \$100,000 cash and building sites upon the best terms possible to the company, or will take 50 per cent. of \$500,000 stock in diversified manufacturing enterprises in order to induce them to locate upon their property. The facilities for iron manufacturing interests especially will be unsurpassed. The railroad will open up fine deposits of Tennessee marble and a magnificent tan-bark and timbered region, and the road will be guaranteed in each contract entered into. Cotton and woolen industries now here are doing well.

R. J. FISHER, General Manager.

## Bessemer Ore.

The Birmingham Age says:

It is learned that iron ores, so low in phosphorus as to make a fine grade of steel by the Bessemer process, have been discovered in inexhaustible quantities at a point about 35 miles distant from this city. The quality is said by experts to be excellent, being very rich in iron and easily reducible. It is learned that Eastern capitalists have secured control of the deposits, and they propose to invest all the means necessary for the development of the mines at an early day. The find promises to be one of the richest yet discovered in this rich mineral region.

TUSKALOOSA, ALA., August 12, 1887.

Editor Manufacturers' Record:

The Tuskaloosa Coal, Iron & Land Company, of Tuskaloosa, Ala., to which city the attention of your readers has several times been called, has purchased and has now in operation a large Diamond prospecting drill. The management of this company is eminently conservative. It wants to know exactly what it is doing, and the very flattering success that has attended its efforts towards developing its town and section proves that it has chosen the wiser course. The purchase of this drill is in accordance with this line of policy.

It is the opinion of geologists that the coal measures of the Warrior field reach their maximum of thickness at the Southern extremity of the field, or immediately around Tuskaloosa. The workings of this drill has thus a scientific interest; it is the eye that will look into the bowels of the earth, not in one place alone, but in many, for it is the purpose of this company to drill in all directions on the immense body of mineral lands belonging to it. In their own developments and in dealing with purchasers of these lands they will thus be enabled to act with perfect intelligence. The first workings of the drill, however, will be near the city, as there is good reason to believe that the town itself has underlying it good workable coal. After this the drill will be taken into the general field.

In this connection may be stated the fact that this company has opened up at a short distance from the city a second thick vein of coal that has been tested and found to produce an excellent coke, and that the Tuskaloosa Northern Railroad, which will penetrate this section, is under construction. The outlook for other roads that are projected in various directions is unusually good. One of Tuskaloosa's strongest points, however, is her river, navigable to the Gulf about eight months in the year. This river is now being surveyed by the general government preparatory to securing the necessary appropriation from the next Congress to remove the obstructions (really slight ones) that prevent navigation through all the year.

Taking things all around, Tuskaloosa is certainly a highly favored point. Her fine coking coal, which experts in the North state compares more favorably with Connellsville coke than any other in the South; her ore, limestone, fine agricultural country, timber, building material, healthful location, fine school facilities, and her rail and water transportation, are the stepping-stones to great and rapid success.

From the New Orleans Daily City Item of August 10 I clip the following:

The following special appeared in yesterday's telegraphic items:

"TUSKALOOSA, Aug. 8.—The contract for grading the first ten miles of the Tuskaloosa Northern Railroad was let to-day to Messrs. Robert Squires & Co., of Birmingham and Cincinnati. Work will begin in ten days after the contract is signed."

"The importance of the above railroad cannot be realized by a hurried reading of the above brief telegram. Starting at the Warrior river at Tuskaloosa, it will run directly through the Warrior coal field, almost due north of Tuskaloosa, forty-six miles, crossing in its course the Georgia Pacific Railroad and the Kansas City, Memphis & Birmingham Railroad, west of Birmingham; but its wonderful importance to the development of the South is seen when it is borne in mind that the opening of this ten miles will enable Tuskaloosa to put coal in Mobile at 50 cents per ton down the Warrior river, as compared with a present all-rail rate from neighboring towns of \$1.90 per ton, a reduction of \$1.40 per ton. Tuskaloosa appears to be highly favored in its position as the only coal and iron town in the Alabama coal district on navigable water. Sales of real estate there show 100 per cent. advance since the Tuskaloosa Coal, Iron & Land Company's sale of April 20."



**Power Punching Pressees.**

Messrs. G. A. Crosby & Co., of Chicago, have recently added to their list an additional line of power punching presses. The accompanying illustration represents one of three sizes of their solid column power punches, which are especially adapted to be operated on bar and sheet metal work of various kinds, such as cutting, punching and forming.

The solid columns occupy but little room. The shaft extends from front to back and fly wheels are in the rear, which for some classes of work make the presses very handy to operate. The shafts are all forged steel



POWER PUNCHING PRESS.

and are extra large at the front which gives a large bearing surface to resist the heavy strain at this point. The adjustment is larger than is usually put on this style of press, as they use a very large eccentric sleeve which gives a large range, and which can be readily adjusted by loosening one screw at the top of the pitman. The friction brake on the shaft insures the stoppage of the crank at the highest point when the clutch is released, while the lower end of the pitman is made very large so as to give as much bearing surface as possible to avoid the wear, and also to avoid any strain on the pin. The slide or cross head is very large and broad, having V-shaped wearing surfaces of correct proportions, so that they do not force the oil away, having a proper shape which will wear true and central.

There are no small pieces to adjust the slide, but set screws are used behind the guides, which, while simple, give the most rigidity of any plan yet devised.

Their improved automatic clutch or stop motion is constructed in such a manner as to enable the operator to set the dies with perfect safety without removing the belt, also doing away with the necessity of having a countershaft.

With this device there is said to be absolutely no danger.

The shaft can be turned to move the slide to the lowest point of the stroke in setting dies while the wheel is in motion, it being impossible to start the press by an accidental pressure on the treadle, so there can be no accidents through heedlessness or neglect. The lock is self-acting.

The wheel can be turned backwards to release the punch when stuck in the die or in setting the dies.

**Decatur Moves Along.**

DECATUR, ALA., August 9, 1887.

*Editor Manufacturers' Record:*

The tide of progress still moves on in Decatur. To-day the grounds for the new union depot are being laid off one mile south of the old depot. The building will be 180 feet long, and will contain waiting rooms, restaurant, offices, &c. The plans are selected and work will commence at once. Just south of this a quarter of a mile will commence the lands of the new Louisville & Nashville Railroad shops. These grounds consist of 80 acres of land on the east side

Lance appeared last evening and is a very creditable production.

The directors of the land company met to-day to formally ratify the contract between the Louisville & Nashville Railroad and the land company for the location of the railroad shops at this place, and also to transact other important business, and to pass upon other contracts of a similar nature.

The secretary of the land company, Dr. Forest, leaves for Atlanta to-morrow to make arrangements for an exhibit of Decatur's industries at the Piedmont Exposition. Among other exhibits will be one of Ivens & Son's force pumps that will raise ten thousand gallons of water per minute; also an iron bridge manufactured by the Decatur Iron Bridge & Construction Co.

**Improved Tapping and Drilling Machine.**

The machine which we illustrate herewith is one recently brought out by D. Saunders' Sons, Yonkers, N. Y. It is designed for tapping steam and gas fittings; also to be used as a drilling machine, or for special use in manufacture where a cutter, or a series of

planed true, serves as an accurate table for such work.

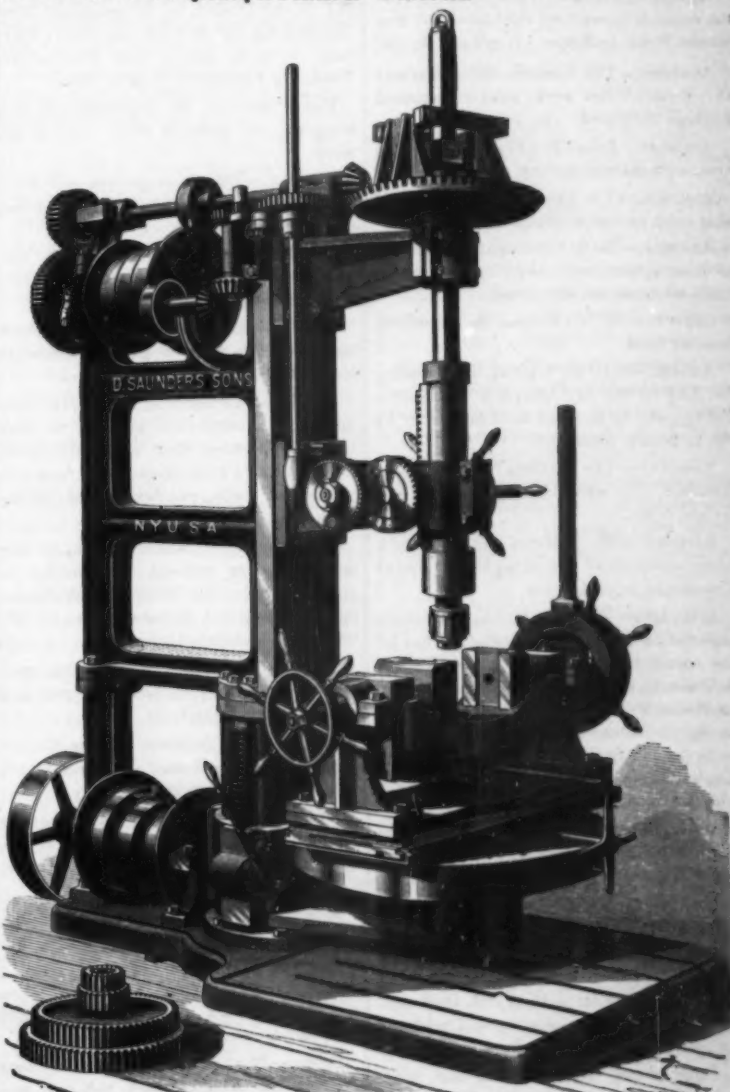
The speed is arranged so as to be suitable for tapping holes in fittings—or in pieces of any kind—from 8 inches diameter down to 1/4 inch; drills or cutters of any kind between and including these sizes can also be satisfactorily used. The range of speed necessary for this wide range of sizes is brought about by changes on the cone pulleys, and by change gears, as shown at the top of machine. These gears can be readily changed so as, in connection with the cone speeds, to give the desired cutting speed.

The spindle is of steel, 3 1/4 inches in diameter. It is counterbalanced and fitted with a convenient arrangement for quickly raising or lowering; also with anti-friction device for tapping.

The machine is represented with the chuck for holding fittings on the table. This is a special chuck, strong and well made; it is provided with compound movement, to permit of self-centering with the spindle.

When required for general use, the machine is furnished with self-feed and everything to make it a powerful and convenient drilling or boring machine.

The weight with chuck for 8-inch fittings is 6,800 lbs.



IMPROVED TAPPING AND DRILLING MACHINE.

cutters are used. The arrangement and construction of the machine are such as to adapt it for a large range of work, so that it is equally fitted for use as a machine for doing a special class of heavy work or for doing a great range of work, from heavy to light. This feature makes it a very convenient tool where frequent changes must be made from light to heavy work, or where it is desirable to tap a large range of fittings on one machine, and occasionally to use it for drilling or boring.

It has a round column and table; the latter can be swung around to any position most convenient for the work, or swung entirely out of the way, for placing heavy pieces on the base plate. The base, being

A CORRESPONDENT at Nelson, Ga., writes us regarding the great marble interests of Pickens county that \$500,000 is now invested in the marble business in that one county and 300 men employed, the output of marble being 1,000 feet per day, supplying 40 gangs of saws. A new mill with 24 gangs of saws is under construction, and when finished will be the most complete marble plant in the world. This immense industry is the result of only three years' work, and is destined to grow to an almost unlimited extent.

# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

## ALABAMA.

Alexandria.—P. D. Phillips & Bro. have purchased machinery for a saw mill. Want wood-working machinery.

Anniston.—Allen & White have received the contract to erect an additional building for the Noble Institute. It will cost \$5,000.

Anniston.—The Anniston Street Railway Co., reported last week, have commenced work on their road.

Anniston.—John B. Fry contemplates erecting a carriage factory.

Anniston.—The Presbyterians will probably erect an educational institution.

Anniston.—W. B. Kearney and associates, of Birmingham, have asked for a permit to build a dummy street railroad.

Ashville.—W. S. Forman is examining iron ore beds.

Auburn.—Bids for erecting a laboratory building for the Agricultural & Mechanical College will be received until August 27 by W. L. Brown, president.

Bessemer.—The Alabama Great Southern Railroad Co. will build passenger and freight depot.

Bessemer.—W. S. Mines and T. C. Buck have incorporated the Mississippi Lumber Co., capital stock \$10,000.

Birmingham.—Josiah Morris, previously reported as to erect a large building, has let the contract for the masonry work to Figh & Williams, of Montgomery; the woodwork to Wallis & Carley; the plumbing and gas fitting to Milner & Kettig; and the iron work to the Sneed & Co. Iron Works, of Louisville, Ky. The total cost will be probably \$250,000.

Birmingham.—The Birmingham & Northwestern Railroad Co., reported last week as organized, are now surveying their road.

Birmingham.—The name of the company lately reported as organized to manufacture steel under the patents of James Henderson, is the Henderson Steel & Manufacturing Co. Machinery for a plant has been purchased. The daily capacity will probably be 20 tons of ingots.

Birmingham.—It is reported that brick works are to be started by Eugene Lafferty, of Detroit, Mich.

Birmingham.—George Bent contemplates purchasing or erecting a wood-working factory.

Birmingham.—The Southern Express Co. contemplate erecting a large building.

Brewton.—The Pensacola & Memphis Railroad Co., of Alabama, will hold a meeting September 21 to consider consolidating with the Pensacola & Memphis Railroad Co., of Florida, and the Pensacola & Memphis Railroad Co., of Mississippi, and to consider increasing capital stock.

Childersburg.—A land and improvement company is being organized. Smith, Oden & Co. can probably give information.

Choccoloco.—George Eichelberger has purchased machinery for saw and grist mill.

Clayton.—There is talk of a guano factory being established soon.

Daphne.—The contract to erect the courthouse, previously reported, has been let to Charles Swift, of Mobile, at \$10,000.

Decatur.—The Decatur Land, Improvement & Furnace Co. have commenced work on four buildings, each 25x100 feet, previously reported.

Decatur.—Negotiations are pending for the establishment of glass works. If anything is done, the Decatur Land, Improvement & Furnace Co. can give particulars.

Dixon's Mills.—G. B. Wright is erecting a steam saw mill and cotton ginnery.

Falkville.—Conwell & Smith are erecting a gin.

Florence.—Cutler Smith, W. E. Haraway, J. W. Beddingfield, J. R. Pouncy, S. O. Johnson and others, of Washington, D. C., and T. A. Deland, of Birmingham, have chartered the Elk & Tennessee Rivers Railroad. It is to extend from Fayetteville, Tenn., via Florence to Tupelo, Miss.

Fort Payne.—J. W. Beaumont, of Birmingham, will build the hotel reported last week.

Gadsden.—The Episcopalians will build a church. Rev. Mr. Allen, of Livingston, can give particulars.

Gadsden.—The Gadsden Land & Improvement Co. are negotiating for the establishment of a cotton-tie factory.

Mobile.—George T. Snyder has received the contract to build a 9-stall roundhouse for the Mobile & Ohio Railroad Co.

Mobile.—The Mobile & Spring Hill Railroad Co., reported last week as to issue bonds to improve their road, will spend from \$75,000 to \$100,000 in laying from 5 to 7 miles of track, purchasing new rolling stock, &c.

Mobile.—W. W. Ansley & Co., of Birmingham, have received the contract to grade 5 miles of the Mobile & Dauphin Island Railroad, and the contract to lay the track from Mobile to Cedar Point.

Mobile.—James W. Brownlee has purchased a saw mill in Louisiana and will move it to near Mobile.

Mobile.—The Sullivan Timber Co., of Pensacola, Fla., will erect a saw mill with a daily capacity of 100 M feet.

Montgomery.—A large wagon factory is reported to be built at Riverside. If correct, the Montgomery Land & Improvement Co. can give particulars.

Montgomery.—The Louisville & Nashville Railroad Co. will build a new iron bridge 4 miles from Montgomery.

Montgomery.—Money is being raised to make preliminary surveys for a railroad from Montgomery to Camden.

Selma.—The machine shop of George Peacock has been enlarged and new machinery added.

Selma.—It is reported that a company is being formed to develop mineral lands in Northern Alabama.

Sheffield.—It is reported that the Corona Coal Co. have purchased and will complete the Birmingham & Sheffield Railroad.

Sheffield.—The Sheffield Agricultural & Machine Works, capital stock \$40,000, have been organized to manufacture plows, wagons and carriages, &c., and do general foundry and machine work. A. H. Moses can give particulars.

Sheffield.—The Sheffield Paint Co., reported last week as contracting to build paint works, will probably manufacture soap later on.

Trussville.—D. N. Talley and Robert D. Hewett have incorporated the Trussville &

Cahaba River Land Co., capital stock \$500,000. Their object is to build up a town or city, establish mills, factories, &c., erect furnaces, &c., and build railroads.

Tuskaloosa.—Willes G. Clark will receive bids until August 24 for erecting for the University of Alabama a chemical laboratory and other buildings and for furnishing machinery for steam laundry and water-works system.

Tuskaloosa.—The engineer of the Tuskaloosa Coal, Iron & Land Co. is surveying a creek near Northport with a view to securing a supply of water for water works.

Tuskaloosa.—Robert Squair & Co., of Cincinnati, O., have received the contract to build the first 10 miles of the Tuskaloosa Northern Railroad. Work will be commenced soon.

## ARKANSAS.

Alexander.—Northern parties have purchased 60,000 acres of timber lands. N. Slack can give information.

Antimony.—It is reported that the Arkansas Developing Co., previously reported, will erect a steel plant soon. Main office in Equitable Building, St. Louis, Mo.

Arkansas City.—The Desha & Eureka Springs Railroad Co., previously reported, has been organized with George P. Bangs as president; L. W. Whitehill, vice-president; H. W. Waldron, secretary, and James Murphy, treasurer.

Camden.—The Camden & Northwestern Railway Co., capital stock 100,000, has been chartered to build a railroad from Camden to a point on the St. Louis, Iron Mountain & Southern Railroad. The directors are Richmond Hibbard, Charles D. Gee, D. Newton, H. O. Spurgeon and W. F. Tole.

Hope.—A cotton factory is talked of.

Hot Springs.—Goodkin, Ayers & Co., of Des Moines, Iowa, will erect \$10,000 of machinery to develop their mine.

Hot Springs.—The Argyle Mining Co. has been organized with R. Murray as president; J. P. Martin, secretary, and J. T. O'Brien, treasurer. The authorized capital stock is \$2,000,000.

Hot Springs.—B. F. Smith Mining & Smelting Co., previously reported, will develop their claims at once.

Hot Springs.—J. W. Barnes has purchased a plant of machinery for the Windsor mine at Bear City.

Little Rock.—The Little Rock Electric Light Co. have commenced work on their new building, previously reported. It will be two stories, 60x70 feet.

Little Rock.—E. L. Givens and J. L. Tullis will incorporate a company to do a printing and book-binding business.

Little Rock.—The Logan Mining & Smelting Co., capital stock \$500,000, has been chartered.

Little Rock.—D. O'Keefe, previously reported as developing stone quarries, has ordered considerable new machinery.

Little Rock.—Subscriptions are being received towards building the cotton factory previously reported.

Star City.—Lincoln county will build a new courthouse.

Texarkana.—It is rumored that a \$50,000 union depot will soon be built.

## FLORIDA.

Carrabelle.—It is stated that work will soon be started on the Tallahassee, Carrabelle & Gulf Railroad, previously reported.

Eustis.—A company will be incorporated to build a canal to connect Lakes Eustis, Yale and Ella and the Ocklawaha river. Mr. Brown and C. T. Smith are interested,

Florida.—The Indian River Canning Co., capital stock \$50,000, has been organized with J. C. Hooper as president; J. W. Nier, vice-president; C. W. Moore, second vice-president; F. W. Foster, secretary, and Cliff Wise, treasurer.

Homosassa.—The Homosassa property has been purchased by E. G. Rideout and others, of New York. They will build a hotel. John F. Dunn, Homosassa, can give information.

Jacksonville.—C. H. Jones, G. W. Jones, J. W. Abernathy and Fred. W. Hoyt have organized as the Times-Union Printing & Publishing Co. Their capital stock is \$100,000.

Jacksonville.—Henry S. Farrar and Mr. Yates have formed a company to manufacture fertilizer from fish. They have leased Calypso island and will build factory there.

Key West.—John L. McDermott has the contract to erect a 2½-story cigar factory, 30x100 feet, for Mr. Gato.

Nassau.—It is reported that a company has been formed to start an oyster canning factory.

Orange County.—Northern parties are, it is stated, prospecting for a location for an extract factory.

Orlando.—George E. Macy will not establish a bone mill, as stated last week. Has sold interest in same to E. W. Spier.

Pensacola.—The Sullivan Timber Co., previously reported, are building two saw mills.

Point Washington.—George W. Wright is putting new engine in his saw mill, reported last week as wrecked by wind.

Satsuma.—The Satsuma Lumber Co. have lately bought the saw mill of Whitney & Hodges. They are repairing it and adding new machinery.

Trabue.—Isaac H. Trabue will build a \$10,000 courthouse if county seat of De Soto county is moved to Trabue.

## GEORGIA.

Americus.—B. H. Hardaway, chief engineer Americus, Preston & Lumpkin Railroad, Americus, invites bids for building an all-iron, standard-gauge drawbridge 180 feet long.

Atlanta.—George W. Parrott, Robert Sherwood, R. J. Lowry, W. H. Nutting, Paul Romare and Samuel F. Parrott have incorporated the Southern Acid Phosphate Co., capital stock \$50,000, to manufacture fertilizers, acid phosphate, ammoniated goods, &c., mine phosphate, sulphur, &c.

Atlanta.—F. M. Fremont, Leon I. Ryan, J. J. McDonough, T. B. Thompson and H. M. Rountree have chartered the Piedmont Lumber Co. to operate saw and planing mill, sash and door factories, &c. The capital stock is \$35,000.

Atlanta.—Joseph M. Brown, William A. Russell, James A. Adair, Eliza A. Brown, C. T. Watson and others have incorporated the Hunnicutt Rheumatic Cure Co., capital stock \$15,000, to manufacture medicines.

Atlanta.—Bills have been introduced in the legislature to incorporate the Georgia Midland Railway Co.; the Midland Telegraph Co.; the Rome, Montgomery & Chattanooga Railroad Co., and the Macon City & Suburban Railway, Light & Power Co.

Augusta.—George R. Lombard & Co. will at once rebuild their machine works, reported in this issue as burned.

Augusta.—Allen & Co., of New Orleans, La., will license a company to erect a plant near Augusta to manufacture wood alcohol, etc., under their (Koch) patents.



Augusta.—The Georgia Chemical Works will build a new acid chamber.

Columbus.—Seale Lodge No. 451, F. & A. M., contemplate building a new hall.

Columbus.—Bids for erecting a school building will be received until September 1st by James Smith.

Du Pont.—A. J. Comer, of Valdosta, has contracted to build a hotel for J. P. A. Du Pont to cost \$7,800.

Elberton.—The county commissioners will build several new bridges at once.

Fort Gaines.—A Virginia party has offered to furnish \$75,000 towards establishing a cotton factory if \$25,000 is raised in Fort Gaines for same purpose.

Georgia.—It is rumored that Northern parties have bought 100,000 acres of pine timber lands in Northern Georgia and South Carolina.

Grantville.—R. D. Coale, Sr., Thomas C. Morehead, Thomas E. Zellars, James W. Colley, Glenn Arnold and others have chartered the Grantville Ginning & Manufacturing Co. to erect a steam cotton gin, ginner, grist mill, cotton-seed oil mill and guano factory. The capital stock is \$20,000.

Griffin.—E. M. Walsh & Co., of Columbus, Ga., reported last week as to establish a 10-ton ice factory, will also erect bottling works and will add electric-light machinery.

Kedron.—James W. Wynn is erecting a mill and ginnery.

Kedron.—T. C. Hardy has overhauled his flour mill.

Macon.—A hall is to be built for St. Andrew's Brotherhood.

Macon.—The contract to build the courthouse, previously reported, has been let to Hendrix & Willingham at \$17,900.

Macon.—The Macon, Birmingham & La Grange Railroad Co., previously reported, are securing sites for depot and machine-shop purposes.

Macon.—St. Joseph's Catholic Church will erect a new church.

Macon.—The South Macon Baptist Church will erect a new church corner of Elm and Laurel streets.

Newnan.—A. C. North and others have formed the North's Chicken Cholera Cure Co., capital stock \$1,000. Will manufacture medicines.

Quitman.—E. J. Young has enlarged and improved his steam cotton ginnery.

Resaca.—A company has been organized to build a canal from the Conasauga river to the Oostanaula river, two miles.

Rockmart.—D. W. K. Peacock and S. Mumford, of Cartersville, have purchased 40 acres of iron ore lands near Rockmart, probably for others.

Rome.—D. B. Hamilton, Joel Branham, A. S. Hamilton, George M. Battey, D. B. Hamilton, Jr., Harper Hamilton and others have chartered the Etna Furnace Co., capital stock \$30,000, to manufacture iron and its products, coke, wood alcohol, &c.

Rome.—Alva C. Lowrey, Daniel A. G. Ouzt and others have incorporated the Bulletin Publishing Co., capital stock \$20,000.

Savannah.—Charles A. Cox, George O. Penton, Edward J. Grady, James Naylor, Jr., and others have formed the Knights of Pythias Hall Association. Will probably build a hall.

Senoia.—The name of the company previously reported as being organized to erect a cotton-seed oil mill and guano factory, by J. D. Boyd, of Griffin, and others, is the Senoia Fertilizer & Manufacturing Co. The capital stock is \$25,000. The company will also manufacture axe and hoe handles, spokes, plows, &c.

St. Mary's.—It is rumored that the Savannah, Florida & Western Railroad Co. (office, Savannah) will build to St. Mary's and establish a lumber port.

Tallapoosa.—The Tallapoosa Land, Mining & Manufacturing Co., previously reported, are opening up their gold property.

Tallapoosa.—It is rumored that a carriage factory is to be erected soon. If true, the Tallapoosa Land, Mining & Manufacturing Co. can probably give information.

Thomasville.—The county commissioners are receiving bids for making improvements to the courthouse, estimated to cost about \$7,000.

Thomasville.—The contract for building stand pipe and laying mains for the water works, previously reported, has been let to Rommerdall & Thompson.

Washington.—One or more new manufacturing enterprises will, it is stated, be established soon. If true, the mayor can probably give information.

#### KENTUCKY.

Ashland.—Albert H. Hovey, Robert G. Hutchins and William Davies have chartered the New Jersey & Dakota Ranch & Cattle Co. Its authorized capital stock is \$500,000.

Cadiz.—A subscription of \$10,000 has been voted to the Ohio Valley Railroad.

Covington.—Bruce Morten, of Newport, has been awarded the contract to extend the Covington Street Railroad.

Greenup.—McDowell & Roberts will, it is said, erect a mill near Greenup.

Henderson.—\$7,000 has been asked for by the managers of the water works to purchase additional pump, boiler, &c.

Irvine.—Estill county has voted a subscription of \$50,000 to the Louisville, Cincinnati & Virginia Railroad, reported last week.

Lexington.—The city council will erect a \$30,000 school building.

Louisville.—The Louisville Spoke Co. have amended their charter to secure the right to manufacture bent-wood work and all kinds of wagon and carriage materials.

Louisville.—G. Ausbeck, L. Dodge, R. P. Gregory and J. H. Thierman have incorporated the Ohio Valley Mining & Development Co. to buy, sell and develop mineral, timber and oil lands. The capital stock authorized is \$1,000,000.

Paducah.—It is reported that a company is being organized to erect iron furnaces and rolling mills. Thomas H. Hayes, of Louisville, can probably give information if report is true.

Paris.—Bourbon county has voted a \$250,000 subscription to the Paris, Georgetown & Frankfort Railroad.

Proctor.—Stuart, Hamilton & Co. have purchased 98 acres of coal lands.

Richmond.—L. E. Francis is starting a broom factory.

Winchester.—Clark county has voted a \$150,000 subscription to the Louisville & Cincinnati Railroad, reported last week.

#### LOUISIANA.

Baton Rouge.—The State Board of Engineers will receive proposals for building levees until August 20.

Lake Charles.—The name of the company reported last week as organized to build a railroad from near Lake Charles to Kansas City, Mo., by J. B. Watkins and others, is the Kansas City, Watkins & Gulf Railroad Co.

Natchitoches.—Work has been commenced on the railroad previously reported to be built by the Red River Land Co.

New Orleans.—The Orleans Cotton Rope & Manufacturing Co., capital stock \$25,000, has been incorporated to manufacture rope, twine, cloth goods, &c., by J. C. Shonekas, John Demarest, P. Labouisse, T. D. Mather, P. L. Girault and others.

New Orleans.—The Chicago, St. Louis & New Orleans Railroad Co. (Illinois Central R. R. Co.) contemplate spending \$700,000 in building large new wharves, &c.

New Orleans.—Samuel S. Patten, James O'Rourke, D. Pike, E. Bennett, H. P. Labatut and others have chartered the Pike Pottery Co., capital stock \$2,000, to manufacture and sell improved furnaces and pottery.

New Orleans.—The Welsbach Incandescent Gas Light Co. is being organized. Office at present at St. Charles Hotel.

#### MARYLAND.

Baltimore.—The Baltimore Copper Smelting & Rolling Co. will enlarge their smelting plant by adding large new furnaces.

Baltimore.—George H. Dobson will build 21 two-story houses on Hope street near North avenue, and John S. Gittings will build 5 two-story houses on Calvert street.

Baltimore.—Charles M. Stieff, previously reported as to rebuild his burned piano factory, has commenced work on a new five-story factory, 116x134 feet, corner of Townsend and Aiken streets. John Haswell & Sons have the contract.

Cumberland.—The Warren Glass Works Co. have improved and enlarged their works.

Frederick.—The flour mill of John L. Keefer, near Frederick, previously reported as burned, will be rebuilt.

Hagerstown.—J. C. Dayhoof has received the contract to repair the Washington county jail at a cost of \$5,000.

Salisbury.—Morton D. Banks, of Baltimore, has been prospecting with a view to building a large furniture factory.

Washington, D. C.—Peter McCahey has the contract to erect a \$7,000 residence for John Moran.

Washington, D. C.—Francis P. Leupp will erect a \$10,500 residence, Thomas I. Cohen an \$8,000 dwelling and B. Wilkins a \$20,000 dwelling.

Washington, D. C.—About \$18,000 is to be spent in building new sewers. The District Commissioners can give particulars.

#### MISSISSIPPI.

Centerville.—The Louisville, New Orleans & Texas Railroad Co. (office, Memphis, Tenn.) will make surveys for a branch railroad from Centerville to the Bayou Sara & Woodville Railroad at Woodville. The company contemplate, it is said, building one or more other branch railroads.

Corinth.—The Tennessee & Mississippi Rivers Railroad Co. are advertising for bids for building their railroad.

Greenville.—The Planters' Compress & Warehouse Co., previously reported, have purchased a Boomer & Boschert press.

Laurel.—Kemper & Levin are erecting works to manufacture wood alcohol.

Meridian.—New machinery will be put in the Meridian Ice Factory to increase its capacity.

Meridian.—The Mobile & Ohio Railroad Co. will, it is stated, build a new depot.

Natchez.—The Young Men's Christian Association will erect a building.

Sandersville.—A company has been organized to start a creamery with John F. McCormick as president; S. Q. Donald, secretary, and T. A. Hightower, treasurer.

#### NORTH CAROLINA.

Asheville.—It is reported that Ohio parties contemplate building a street railroad.

Big Falls.—J. V. Pomeroy, of Charlotte, and P. R. Harden and J. H. Harden, of Graham, have purchased the Big Falls property, and will build a cotton factory at once. They will put in 2,000 spindles at first and increase to 6,000 spindles later. Will build ten tenement houses this fall.

Chadbourn.—A large hotel will probably be erected soon.

Clay County.—A manganese and nickel mine is being developed by J. D. Caldon, of Murphy.

Durham.—The Seaboard & Roanoke Railroad Co. (office, Portsmouth, Va.) will build a branch railroad from Henderson to Dur-

ham if a subscription of \$100,000 is voted. The Richmond & Danville Railroad Co. will build from Oxford to Durham if \$50,000 is subscribed.

Edenton.—There is talk of an ice factory being erected; also a furniture factory.

Greensboro.—The United States Asphalt Conduit Co. has been incorporated by D. Schenck, Weldon E. Schenck, A. S. Barber, Alfred Sully, F. V. Greene, W. A. Callendar and Charles Matthews. The authorized capital stock is \$20,000.

Greensboro.—There is talk of an electrical street railroad being constructed.

Greensboro.—E. W. Bowditch, of Boston, Mass., is making surveys for water works and a sewerage system.

Hickory.—McInturff & Propst have started the manufacturing of harness.

High Point.—The incorporators of the Georgia Co., reported last week as chartered to purchase, own and build railroads, are D. Schenck, S. H. Wiley, Thomas B. Keogh, G. W. Dithridge, R. L. Collier and others.

Lincolnton.—George Richards, Dover, N. J.; R. F. Hoke and J. C. Winder, of Raleigh, and others have incorporated the Lincoln Lithia Water Co., capital stock \$10,000.

Lincolnton.—Daniel E. Rhyne, of Mt. Holly, reported last week as purchasing a water-power site for a cotton factory, will build at once.

Morganton.—Walter Brem, John H. Pearson, L. T. Avery, C. W. Avery and others have chartered the Morganton Land & Improvement Co., capital stock \$20,000, to buy, sell and develop mineral and other lands, &c. J. H. Pearson is president.

Murfreesboro.—The Murfreesboro Railroad Co., previously reported, has been organized with B. B. Winborne as president; E. F. Rice, vice-president, and R. W. Winborne, treasurer.

New Berne.—Crabtree & Co. are enlarging their machine shops.

North Carolina.—The Roanoke Railroad & Lumber Co. are building a large lumber mill.

Oxford.—William B. Crews, reported last week as to develop coal mine, will erect machinery to test his coal deposits.

Raleigh.—The Agricultural & Mechanical College will erect building at a cost of \$50,000. Charles L. Carson, of Baltimore, Md., is preparing plans.

Raleigh.—The Raleigh Street Railroad Co. will extend their road.

Raleigh.—A. D. Royster & Bro. have put steam power in their candy factory.

Shelby.—It is reported that work will soon be commenced on the extension of the Carolina Central Railroad (office, Wilmington) from Shelby to Asheville, previously reported.

Shelby.—The cotton mills of Morgan, Cline & Co., previously reported, will have a spinning room, 47x140 feet, lapper room, 25x40 feet, and an engine room, 15x25 feet, all one story (16 feet.)

Smithfield.—It is stated that iron ore mines will soon be developed.

Washington.—A company is being organized to build a hotel.

Washington.—D. C. Way & Co. will at once rebuild their lumber mill in Beaufort county, reported last week as burned.

Williamston.—It is rumored that the Wilmington & Weldon Railroad Co. (office, Wilmington) will extend their railroad from Williamston to Jamesville, and that the Jamesville & Washington Railroad Co. (office, 423 Walnut street, Philadelphia, Pa.) will build from Jamesville to Plymouth.

Wilmington.—The city has voted to subscribe \$100,000 to the Wilmington, Onslow & East Carolina Railroad.

Wilmington.—R. S. Love, C. S. Love, R. W. Hicks, G. F. Love and A. H. Morris

\*have formed a company to manufacture medicines.

Winston.—J. L. Ludlow is making surveys for a sewerage system.

#### SOUTH CAROLINA.

Aiken.—J. C. Courtney is receiving proposals for building eight bridges in Aiken county.

Aiken.—\$10,000 has been subscribed towards organizing a company to build a hotel.

Berkeley County.—A company is reported as being organized to erect large saw and planing mills.

Charleston.—It is proposed to build a railroad along the eastern water front of the city.

Charleston.—The City Railway Co. are preparing to extend their road.

Charleston.—The report referred to last week that the Charleston & Savannah Railroad Co. contemplate building a railroad from Drayton's Station to west side of Ashley river is not true.

Columbia.—The building of an additional reservoir at the water works is being considered.

Columbia.—W. A. Wright, representing the Brush Electric Light Co., has asked for permit to erect a plant. If granted, the plant is to be in operation by February.

Florence.—It is rumored that the Pullman Palace Car Co., of Pullman, Ill., will erect car repair shops.

Georgetown.—Ehrig & Moses have started a distillery lately.

Spartanburg.—John B. Cleveland, S. J. Simpson, W. E. Burnet, Joseph Walker and J. H. Sloan have chartered the Spartanburg Land & Improvement Co., capital stock \$10,000, to buy, sell and improve land, establish factories, build street railroad, &c.

Spartanburg.—Moffett, Hodgkins & Clarke, of Waterton, N. Y., previously reported as contracting to build water works, have purchased a site for stand pipe.

Walterboro.—An academy is to be built. C. G. Henderson or A. Wichmain can give particulars.

#### TENNESSEE.

Bristol.—A. F. Willey, of Grand Rapids, Mich., will have a saw mill in operation by January, 1888.

Chattanooga.—George L. Margerum, Henry Tod, F. Ford, John P. Richardson, M. L. Chapman, John A. Hart and Charles A. Lyerly have chartered the Chattanooga Agricultural Works, capital stock \$300,000, to operate the Anson Mower & Reaper Works, lately reported to be moved from Youngstown, O., to Chattanooga.

Chattanooga.—The D. M. Stewart Manufacturing Co., capital stock \$30,000, has been incorporated to manufacture lava gas tips, electric insulators &c., by D. M. Stewart, John P. Richardson, M. L. Chapman, John L. Divine, W. J. Willingham and others. Will operate the factory of D. M. Stewart, of Cincinnati, O., which is to be moved to Chattanooga. Bids for erecting brick factory and frame warehouses will be received until August 24.

Chattanooga.—Eakin & Cheek, W. A. Willingham, A. W. Chambliss, L. H. Russ and others have formed a \$20,000 stock company to operate the New South Wagon Works, which will be moved to Chattanooga from Shelbyville. A site is being selected.

Chattanooga.—The Hauss Electric Light Co., lately reported as chartered, have purchased machinery for their plant.

Chattanooga.—The Rome & Carrollton Construction Co. has been formed to construct the Chattanooga, Rome & Carrollton Railroad, by J. D. Williamson and others.

Chattanooga.—The Chattanooga, Rome & Carrollton Railroad Co., previously reported, have let the contract for the first 6 miles to S. S. Eaton, of Sheffield, Ala. J. C. Clements is president of the company.

Chattanooga.—The Hamilton Natural Gas & Oil Co., are leasing more oil and gas lands near Chattanooga.

Chattanooga.—John C. Vance has purchased the Chattanooga Cotton Factory.

Cleveland.—It is reported that a stock company will be organized to build an ice factory.

Columbus.—The gauge of the Duck River Valley Railroad will be widened.

Dayton.—Surveys are being made for a road to extend from the Cincinnati Southern Railroad to the Tennessee river at Darius. John H. Ferguson is interested.

Jackson.—The Tennessee Midland Railroad Co. have purchased 3 acres of land for depot purposes.

Jackson.—A stock company has been formed to erect the electric light plant lately reported to be built by W. A. Settle, of Clarksville. The Jenny system will be used.

Jasper.—S. W. Marshall, of Cleveland, has been awarded the contract to build the college, previously reported, at \$19,000.

Knoxville.—It is reported that the Walden's Ridge Railroad (office, Jenks,) will be extended to Knoxville.

Knoxville.—The city has voted the subscription of \$275,000 to the Knoxville Southern Railroad and the \$225,000 to the Powell's Valley Railroad, previously reported. Work on these roads will be commenced soon.

Knoxville.—M. J. Palmer is organizing a company to build a large soap factory. The capital stock will probably be \$100,000.

Knoxville.—C. Maxwell, C. M. McClung, E. Waterhouse, R. A. Anderson and Charles B. Wallace have incorporated the Campbell Wallace Coal & Coke Co., to mine coal and manufacture coke.

Knoxville.—The Knoxville Cigar Co. will increase their capacity.

Knoxville.—It is reported that \$100,000 has been raised for the Carolina, Knoxville & Western Railroad, previously reported.

Maryville.—The incorporators of the Maryville & Little Tennessee Railroad Co., lately reported, are C. T. Cates, Sr., James K. Wilson and others.

McMinnville.—Permit to lay pipes to supply the town with natural gas has been asked by parties who have leased and will reopen an old gas well. Houchin & Biles can give information.

Memphis.—Thomas F. Duffin, J. H. Smith, Luke E. Wright, J. J. Smith, E. B. McHenry and W. D. Beard have chartered the Memphis & Chelsea Railway Co., to build a street railroad.

Memphis.—The Jackson Mound Park Railroad Co. has been organized to build a street railroad. Will use either steam or electric power.

Nashville.—The contract to build the new reservoir, previously reported, has been awarded to Whitsit & Adams, of Indianapolis, Ind., at \$330,921. They will begin work at once.

Nashville.—The Brush Electric Light Co. will add a Westinghouse incandescent plant to their present plant at a cost of \$30,000. Have contracted for machinery.

Nashville.—James Sutherland and Mr. Jordan will start a planing mill.

Oliver Springs.—A natural gas and oil company has, it is reported, been formed with a capital stock of \$1,000,000.

Paris.—The Paducah & Tennessee Railroad Co. has been organized with R. L. Elison as president; T. H. Furicar, vice-president, and J. L. Lemonds, secretary and treasurer.

Paris.—Currier & Weaver have erected a pottery and are arranging to extensively manufacture all kinds of earthenware.

Whitesburg.—There is talk of a tannery being started by Mr. Ervan.

Winchester.—The Winchester Manufacturing Co. are erecting a factory.

#### TEXAS.

Bonham.—The contract to build the courthouse, previously reported, has been awarded.

Brenham.—The Brenham Oil Mills are building new warehouses and seed sheds at a cost of \$18,000.

Brenham.—The Brenham Street Railroad will be extended.

Cleburne.—It is rumored that the Atchinson, Topeka & Santa Fe Railroad Co. (office, Topeka, Kan.) will build a hospital.

Cleburne.—The Imperial Roger Milling Co., capital stock \$25,000, has been chartered by W. E. Stratten, S. B. Allen, J. C. Conway and James D. Osborn.

Corpus Christi.—The city council contemplate issuing \$40,000 of bonds to build water works. The water-works committee are corresponding with well-boring companies.

Dallas.—The Forest City Petroleum, Gas & Drill Co., of Cleveland, O., have received the contract to bore an artesian well for the city.

Dallas.—It is stated that work on the Dallas, Archer & Pacific Railroad, previously reported, will be commenced within three weeks.

Dallas.—S. C. Richardson has purchased machinery to increase the capacity of his ice factory from 10 to 16 tons daily.

Dallas.—The Oak Cliff Water Supply Co., previously reported, will receive bids for building water works at Oak Cliff until August 25.

Dallas.—Henry Pollack & Co. contemplate building a new and larger trunk factory.

Dallas.—Alexander Sawyer will build a \$12,000 residence.

Dallas.—The Dallas Fishing Club have contracted to have an artesian well drilled.

Dallas.—The Texas Farm & Ranch Publishing Co., capital stock \$50,000, has been incorporated by F. P. Holland, A. J. Porter and W. A. L. Knox.

Fort Worth.—Chris Fox, of Galveston, contemplates, it is said, establishing a cracker factory.

Galveston.—The Mallory Steamship Co. will enlarge their warehouse, and probably build a new one.

Granbury.—The Fort Worth & Rio Grande Railroad Co. have purchased 50 miles of steel rails for the extension beyond Granbury, previously reported.

Houston.—John Boyd, E. L. Dennis and G. M. Langdon have chartered the Houston Building Co., capital stock \$10,000, to manufacture and sell portable houses.

Houston.—The Texas Live Stock Association are making efforts to raise the rest of the money to build the refrigerator, previously reported.

Houston.—It is stated that James A. Railey will visit Marseilles, France, for the purpose of "conferring with several large manufacturers of olive and sweet oils with a view to establish cotton-seed oil mills and refineries either in Louisiana or Texas."

Laredo.—The Mexican National Railroad Co. will, it is said, move their machine shops from Corpus Christi to Laredo, provided they will be exempted from taxation.

Laredo.—There are prospects of a \$100,000 stock company being formed to build a large hotel.

Marble Falls.—T. H. Holloway has purchased machinery to start a steam tannery.

Mineral Springs.—A coal mine is being developed.

Mineral Wells.—Robert Dalton will sink a gas well.

Nechesville.—A steam ginny and grist mill are being erected by Braley & Chandler.

Paris.—The Red River Mining Co., capital stock \$500,000, has been organized to develop coal mines in the Indian Territory by John Martin, S. B. Maxey, J. F. Williams and P. H. Harrison, of Chicago, Ill., and others.

Paris.—The capital stock of the Paris Railroad Co. has been increased to \$50,000.

Paris.—It is reported that a company has been organized to build a railroad to Caddo, I. T.

Pleasanton.—A coal mine six miles from Pleasanton will probably be developed by J. R. Mason, of San Antonio.

Rockland.—A saw mill is being erected by Carroll & Son. The capacity will be from 30 M to 40 M feet per day.

Taylor.—The capacity of the railroad shops is to be doubled.

Terrell.—The water works will be improved. John L. Terrell can give information.

#### VIRGINIA.

Accomac C. H.—James H. Fletcher, Jr., will receive bids until September 5 for the erection of a two-story building to cost about \$6,000.

Clarksville.—The contract to build the Oxford, (N. C.) & Clarksville Railroad, previously reported, has been let to the New York & Southern Construction Co., of New York. Work has been commenced.

Columbia.—The Byrd Creek Iron Co., previously reported, has been organized with a capital stock of \$150,000. The incorporators are J. J. A. Powell, Charles Willard, T. E. Cowherd, William M. Foster and others. The company will develop ore mines, build a five-mile railroad, &c.

Coyner's Springs.—A zinc mine is being developed by John H. Bartlett.

Farmville.—A subscription of \$50,000 has been voted to the Farmville & Powhatan Railroad.

Folly Mills.—The Folly Mills have been repaired and improved.

Halifax C. H.—T. T. Frazier, W. D. Barbour and J. W. Easby have formed a company to manufacture spokes, hubs, shuttles blocks, &c. Have purchased some machinery and are erecting a factory.

Lynchburg.—The Lerner Manganese Co., reported last week as organized at Huntington, W. Va., are developing the Leeds mine near Lynchburg.

Lynchburg.—Covenant Lodge No. 12, Colored Masons, reported last week as to build a \$7,600 hall, will receive proposals until September 1.

Lynchburg.—The Norfolk & Western Railroad Co. have contracted for a new iron bridge at Southside Island.

Lynchburg.—Proposals for the grading, masonry and trestling for the first 10 miles of the Lynchburg & Durham Railroad, previously reported, will be received until August 25 by the chief engineer, J. W. Goodwin, 1110 Clay Street.

Marion.—The city has decided by a popular vote to build water-works to cost from \$12,000 to \$15,000.

Markham.—Kingsley Bros., of Hamilton, will establish a branch creamery.

Marksville.—B. C. Rust has lately opened an iron-ore mine near Marksville. Operations at his mine near Kimball will be resumed.

McTeer.—The Cave Hill Furnace has been purchased by George W. Palmer, of Saltville, Va., and Robert Sayers and Dr. Sayers.

Norfolk.—S. R. White & Bro., reported some months ago as to rebuild foundry, are putting up large foundry and agricultural implement shops.

Petersburg.—The contract to enlarge the Eastern Lunatic Asylum, near Petersburg, has been let to G. B. Eanes at \$23,000.



Pittsylvania County.—John Loyd, Jr., of Lynchburg, has leased and will develop a baryta mine.

Pocohontas.—A new town is to be started at the mouth of Flippen creek to be called Duhring.

Pulaski City.—J. P. Pettyjohn & Co., of Lynchburg, have the contract to build 20 houses.

Pulaski City.—A \$5,000 school building is to be erected.

Richland.—William White, of Abingdon, has opened several of the veins of coal on his lands near Richland.

Wise C. H.—The Virginia & Tennessee Iron & Coal Co., previously reported as incorporated, has been organized with G. M. Fogg, of Nashville, Tenn., as president; A. M. Shook, Birmingham, Ala., vice-president; J. B. Killebrew, secretary, and T. P. Trigg, treasurer. The capital stock is \$5,000,000. The company own large bodies of mineral lands in Virginia and Kentucky and will, it is said, build three iron furnaces.

#### WEST VIRGINIA.

Clarksburg.—A. T. Lowndes is preparing to rebuild his saw mill reported in this issue as burned.

Clarksburg.—The city will probably soon decide by a popular vote, whether or not to issue about \$30,000 of bonds, to build water works.

Fayetteville.—Frank Davis, of Baltimore, Md., has received the contract to build the courthouse, previously reported, at \$24,500. It will be 65x105 feet.

Kingwood.—A syndicate has been formed to complete the Kingwood Railroad. George M. Whitescarver, Grafton, is superintendent.

Marion County.—The Montana Coal & Coke Co. have purchased more coal lands.

New Richmond.—L. E. Burdett is adding a stove mill to his saw mill.

Piedmont.—A cigar factory will be started.

West Virginia.—A company has been formed at Greenville, Pa., to develop mineral lands in West Virginia, with J. B. Long as manager. They have bought 8,000 acres in Greenbrier county. A company has, it is said, been chartered to build a railroad from White Sulphur Springs to Huntersville to open up these lands.

Wheeling.—The Citizens Railway Co. contemplate extending their street railroad.

Wheeling.—The Wheeling Railway Co. have received permit to build a street railroad.

#### BURNED.

Augusta.—The machine works of George R. Lombard & Co., damaged about \$15,000 by fire. Will be rebuilt at once.

Beach Ridge, N. C.—The lumber mill of Roland & Co.

Clarksburg, W. Va.—The saw mill of R. T. Lowndes; loss about \$4,500. Will be rebuilt at once.

Elberton, Ga.—The mills of M. V. Day and J. S. Pulliam, in Elbert county, are reported destroyed by the late freshets.

Elizabeth City, N. C.—The saw mill of D. W. Morgan, 10 miles from Elizabeth City, wrecked by a boiler explosion.

Herrdon, Ky.—The saw mill of Pace & Vaughn damaged by a boiler explosion.

Jackson County, Ga.—The mill of D. Mathews destroyed by a flood.

Louisville, Ky.—The factory of the Southern Soap Co.; loss \$8,000.

Louisville, Ky.—The Southern Wheel & Handle Works, owned by A. L. Smith; loss \$20,000.

Lynchburg, Va.—The grist mill of Samuel Patterson.

Macon, Ga.—The planing mill and box factory of W. H. Moxley & Co.; loss \$8,000.

Memphis, Tenn.—The flour mill of the Eagle Milling Co.; loss \$37,000.

Milton, W. Va.—The saw mill of Wilbert Egger, 5 miles from Milton.

Mobile, Ala.—The turpentine distillery of Paterson & Downing; loss \$2,500.

Rutherfordton, N. C.—The mill of Mr. Hamrick, on Webb's creek, destroyed by the late freshet.

Versailles, Ky.—The slaughter house of A. Hobert.

#### Building a Railroad.

RICHMOND, VA., August 15, 1887.

*Editor Manufacturers' Record:*

The contract for building the Oxford & Clarksville Railroad was taken by the New York & Southern Construction Co., and is certainly expected to be completed by January 1, 1888. Grading was commenced 30 days ago, and there are now about 250 to 300 hands and 60 carts working on the road.

CHARLES WATKINS.

#### Remodeling Flour Mill.

CHESAPEAKE CITY, CECIL CO., MD., }  
August 13, 1887. }

*Editor Manufacturers' Record:*

I am putting in my Black Creek Mill rolls and machinery for a flour mill, with a capacity of 40 barrels daily.

WM. R. FREEMAN.

NEW BERNE, N. C., August 11, 1887.

*Editor Manufacturers' Record:*

I have contracted to build a bank building for Messrs. Green, Foy & Co., bankers, in New Berne, N. C., and have just completed the Hotel Albert in this city.

C. J. SCHEELKEY.

NEW ORLEANS, LA., August 9, 1887.

*Editor Manufacturers' Record:*

We are manufacturing a specialty in cotton gin brushes, under patent No. 360,486, April 5, 1887. These brushes are made to fit any make of gin.

SPANGENBERG COTTON GIN BRUSH CO.

PETERSBURG, VA., August 15, 1887.

*Editor Manufacturers' Record:*

I have the contract for enlargement of the Central Lunatic Asylum near this city at a cost of \$23,000.

G. B. EANIS, Agt.

COVINGTON, VA., August 12, 1887.

*Editor Manufacturers' Record:*

We put in a 36-inch Success wheel, pulleys, shafting, &c., necessary to run our corn mill; also new forebay and penstock.

MCALLISTER & BELL.

BIRMINGHAM, ALA., August 13, 1887.

*Editor Manufacturers' Record:*

The Tuscaloosa & Northern Railroad is expected to be built soon, 40 miles. We have got the first part of it, extending to the Big Warrior, a distance of seven miles.

R. H. SQUAIR & CO.

AUBURN, ALA., August 13, 1887.

*Editor Manufacturers' Record:*

The trustees of this college have determined to erect a new chemical laboratory to cost \$10,000. This building will be begun about April 1. The main college building is to be rebuilt, having been destroyed by fire on 24th June. Bruce & Morgan, of Atlanta, are the architects. It will be three stories, with basement, 170x70 feet, and will cost probably, when completed, fifty to sixty thousand dollars.

AGRICULTURAL & MECHANICAL COLLEGE.

W. L. BROWN.

BILESVILLE, STANLY CO., N. C., }  
August 10, 1887. }

*Editor Manufacturers' Record:*

We are developing the mines Biles, Parker, Flint Spring, and Johnny Parker; also running a water race on bank of Yadkin river,  $\frac{3}{4}$  mile, to connect by 4 pumps to pipe line  $4\frac{1}{4}$  miles to mines.

STANLY FREEHOLD GOLD MINE,

WM. NANCE, Man.

#### MACHINERY WANTED.

(If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish send us particulars as to the kind of machinery needed. We will make you a written quote free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, &c.)

Canning Machinery.—W. P. Poland, Marshall, Texas, wants the address of manufacturers of canning and evaporating machinery.

Cotton Rope and Cordage Machinery.—The W. A. Huffman Implement Co., Fort Worth, Texas, desire to correspond with manufacturers of machinery for making cotton rope and cotton cordage.

Cotton Seed Hull Machinery and Fertilizer Bags.—The Griffin Fertilizer & Manufacturing Co., Griffin, Ga., want to purchase the best mill for hulling and grinding cotton seed into fine meal, suitable for making a fertilizer; also want to purchase large quantities of fertilizer bags.

Electric Light Plants.—Jackson, Tenn., invites proposals for exclusive privilege of an electric light and power plant for five years; also for lighting the city with not less than 20 electric lights of 2,000 candle-power each. Sealed bids received till September 6th by John T. Stark, city recorder.

Engine, Lathes, Tools, &c.—Proposals for furnishing engine, lathes, tools, etc., to be delivered at Norfolk, Va., will be received until August 25th by Bureau of Provisions & Clothing, Navy Department, Washington, D. C.

Laundry Machinery.—George W. Morton, Mountain Lake Park, Md., wants catalogues of laundry machinery.

Spice and Coffee Mills.—The Wiggs & Bacon Co., Birmingham, Ala., want the address of manufacturers of spice and coffee mills to be run by steam.

Spoke and Handle Machinery.—The address of manufacturers of spoke and handle machinery is wanted by E. W. Walpole, Talladega, Ala.

Tooth-pick Machinery.—George F. Crush, Bristol, Tenn., wants to buy machinery for making wood tooth-picks.

Traveling Cranes.—The Navy Department at Washington, D. C., will receive proposals until September 15 for constructing three overhead traveling cranes, furnishing iron frame for a building, &c.

Water Works Supplies.—Rommerdall & Thompson, Thomasville, Ga., want bids on 8, 6, 4 and 3-inch cast iron pipes, brass and iron fittings, wrought iron pipe, fire plugs, &c.

Wood-working Machinery.—P. D. Phillips & Bro. want to purchase wood-working machinery.

#### Mineral Lands to be Developed.

LLANO, TEXAS, August 9, 1887.

*Editor Manufacturers' Record:*

The parties from St. Louis have bought the 50,000 acres of iron ore land in our county and are buying more, and will develop same. We look for a first-class boom this fall.

W. T. MOORE, JR.

#### May Build New Reservoir.

COLUMBIA, S. C., August 15, 1887.

*Editor Manufacturers' Record:*

It is proposed to build another reservoir for water works. Not yet commenced.

JOHN T. RHETT.

#### Cotton Compress.

HAZLEHURST, MISS., August 13, 1887.

*Editor Manufacturers' Record:*

The compress is an assured fact. Machinery has been ordered. Owned by stockholders, citizens of this town. We have in course of erection also a creamery by stockholders. J. A. Covington is secretary and treasurer of compress, and Jno. C. Harris, secretary of creamery. F. M. SEXTON.

#### Will Rebuild Saw Mill.

CLARKSBURG, W. VA., August 13, 1887.

*Editor Manufacturers' Record:*

I am preparing to rebuild my saw mill and expect to use the band saw.

A. T. LOWNDES.

#### Improved Flour Mill.

WILLIAMSPORT, MD., August 11, 1887.

*Editor Manufacturers' Record:*

We bought some gearing, cog wheels, shafting, &c., for replacing wooden wheels and shafts and added one story to our mill, and are now fully equipped with all machinery we need for the present.

WM. DE FREHN.

#### Electric Light Works.

CHATTANOOGA, TENN., August 13, 1887.

*Editor Manufacturers' Record:*

The Hauss Electric Lighting & Power Co. have contracted for the construction of two 80 horse-power boilers here. The Union Iron Works Co. got the contract. The engine are being constructed in Cincinnati. We expect to be in operation in about 60 days.

H. M. WILTIE.

#### New Manufacturing Enterprises.

SHEFFIELD, ALA., August 12, 1887.

*Editor Manufacturers' Record:*

Sheffield Paint Co., with capital of \$60,000, organized, and will erect works at once to manufacture paints, &c. They will later on probably manufacture soap in addition. Sheffield Agricultural & Machine Works, capital \$40,000, organized, and will manufacture plows, buggies and wagons, and do a general foundry, machine shop and blacksmithing business.

A. H. MOSES.

#### Anniston Street Railroad.

ANNISTON, ALA., August 12, 1887.

*Editor Manufacturers' Record:*

The Anniston Street Railroad Co. has been organized and work already begun. Capital stock—all taken—\$20,000.

J. W. NOBLE.

#### Will Remodel Flour Mill.

HAVRE DE GRACE, MD., August 10, 1887.

*Editor Manufacturers' Record:*

I am about to remodel my mill. I want to increase my capacity.

JNO. L. COOK.

#### Building Large Piano Factory.

BALTIMORE, MD., August 12, 1887.

*Editor Manufacturers' Record:*

We are building a large piano factory.

CHAS. M. STIEFF.

#### Proposals Wanted for Building Railroad.

LYNCHBURG, VA., August 12, 1887.

*Editor Manufacturers' Record:*

Proposals have been advertised for, to be opened on the 25th of this month. The Lynchburg & Durham Railroad is projected from Lynchburg, Va., to Durham, N. C., and is 112 miles in length, and will cost to build and equip about \$14,000 per mile.

P. J. OTY, Pres.

CHATTANOOGA, TENN., August 9, 1887.

*Editor Manufacturers' Record:*

We have applied for a charter for the Lookout Mountain, Lula Lake & Gadsden Railroad. It is now on its second reading in the legislature. As soon as the charter is obtained we expect to organize and push the enterprise. This road will pass through the most picturesque section in the South, rich in minerals, salubrious climate, and offering to seekers of health and pleasure as much, if not more, than any other section.

W. P. MCCLATCHY.



**Erecting a 10-Ton Ice Factory.**

COLUMBUS, GA., August 9, 1887.  
*Editor Manufacturers' Record:*

We have commenced the building of a 10-ton ice factory at Griffin, Ga. Building will be of corrugated iron. Machine will be a Stratton absorption. Will have bottling works attached, same as we have here. Will also add electric light machine for public and private lighting.

E. M. WALSH & Co.

**Will Build Railroad at Once.**

WINCHESTER, KY., August 8, 1887.  
*Editor Manufacturers' Record:*

The Louisville, Cincinnati & Virginia Railway will be built from Winchester via Irvine to Beattyville at once; distance 55 miles. The general offices are at Winchester, Ky., and 10 Wall street, New York. Information in regard to lands, coal, minerals, timber, etc., will be given by J. G. Stuart, Winchester, Ky., and as to construction by J. C. Turner, chief engineer.

J. C. TURNER.

**Developing Zinc Mines.**

COYNER'S SPRINGS, VA., August 13, 1887.  
*Editor Manufacturers' Record:*

I am developing a deposit of calamine (carbonate of zinc) in Dolomite. The extent of same appears extensive, but can only be established by actual production. The ore character is very good. We are now producing and shall begin shipping to Northern works as soon as cars are here as ordered. The grade of the ore is 38 to 45 per cent. metallic zinc; no silver or gold, no lead. These are exact facts.

JNO. H. BARTLETT.

**Opening Ore Mines.**

TALLAPOOSA, GA., August 9, 1887.  
*Editor Manufacturers' Record:*

The Tallapoosa Land, Mining & Manufacturing Co. have uncovered a lead of manganese ore 100 feet wide of a very valuable quality, and are now engaged in sinking a shaft to the depth of 50 feet. Eminent geologists pronounce this the largest and finest quality of manganese yet discovered in the South, and report that the quantity is inexhaustible. The company employ 25 men on this lead, and are opening up their gold property. Nearly 100 men are employed in cleaning and grading streets in Tallapoosa.

TALLAPOOSA LAND, MINING & MFG. CO.

**To Mine and Manufacture Manganese.**

MASON, W. VA., August 13, 1887.  
*Editor Manufacturers' Record:*

We obtained a charter under the laws of West Virginia under the name and style of the Lerner Manganese Co. for the purpose of mining, grinding and selling manganese. The mine is known as the Leets mine on the Norfolk & Western R. R. near Lynchburg.

H. LERNER.

**Two Railroads Chartered.**

MARYVILLE, TENN., August 12, 1887.  
*Editor Manufacturers' Record:*

Myself and some others have obtained charters for the Maryville & Little Tennessee River Railroad Co.; also for the Maryville & Little River Railroad Co.

C. T. CATES, SR.

**A Mining Company.**

HOT SPRINGS, ARK., August 12, 1887.  
*Editor Manufacturers' Record:*

The Antioch Mining Co. was organized on the 6th inst. J. Cressy, president and J. C. Howell, secretary. The property of the company is located in Garland county, Ark.

J. CRESSY.

**To Build a Hotel.**

FORT PAYNE, ALA., August 15, 1887.  
*Editor Manufacturers' Record:*

Mr. J. W. Beaumont, of Birmingham, Ala., will build a large hotel here soon.

C. O. GODFREY.

WE have frequently pointed out the value to any locality of a live, enterprising, well-conducted paper, and urged upon the citizens of Southern towns the importance of supporting liberally their local papers, not merely for the direct returns to be received through their advertisements, but for the benefits certain to inure to the town in general through the attention drawn to it by the paper, the estimate of every city's importance being measured to a large extent by the character of its papers and the degree of local support accorded them.

It is gratifying in this connection to notice the improvement in Southern journalism within the last few years. A conspicuous example of this advancement is seen in the daily Hot Blast, of Anniston, Ala. There is probably no other town in the country with Anniston's population that can boast the possession of a daily paper so ably edited and so well managed. One most notable point of difference between the Hot Blast and most local papers is its independence; its evident determination to tell the truth about everything and at all times. Such a course can be productive of only good. They are our best friends who tell us of our faults and point the way to their correction.

The Hot Blast is attracting attention throughout the country, and is frequently quoted by the leading dailies. Mr. J. R. Randall, its accomplished editor, is laboring zealously in behalf of the best interests of the beautiful city of his adoption, and is doing much to hasten a fulfillment of the splendid destiny towards which it is tending.

MOBILE, ALA., August 10, 1887.

*Editor Manufacturers' Record:*

We will begin improving the railroad by laying 5 to 7 miles track and purchasing two locomotives, grading and improving the old property, by adding new rolling stock, etc. The cost will be in the neighborhood of \$75,000 to \$100,000.

MOBILE & SPRING HILL RAILROAD CO.

C. R. MAKEPEACE & CO.  
ARCHITECTS and MILL ENGINEERS  
PROVIDENCE, R. I. Plans, Specifications and Estimates furnished for Cotton and Woolen Mills.

D. W. K. PEACOCK,  
Real Estate Agent,  
CARTERSVILLE, GA.  
Minerals a Specialty.

Refers to THE HOWARD BANK, Cartersville, Ga.  
J. W. RANKIN, Atlanta, Ga.

**FOR SALE,**  
At Acton, Florida, on the South  
Florida Railroad, a  
**LARGE SAW MILL,**

WITH  
Buildings, Boiler and Engines, Planer and  
Matcher, (Double Surface,) Rip Saw,  
Emery Grinding Machine, Band  
and Jig Saw, Log Hoist and  
Drum, and Pump for  
Elevating Water.

The entire outfit complete and in good order, with about two thousand logs in the boom and considerable lumber in yard. Mill is situated on the shore of a large lake, in a well wooded country. Will sell entire property for \$6,000.

For further particulars, apply to  
**The KISSIMMEE CITY BANK**  
Kissimmee City, Fla.

**COPY OF ORDINANCE**

Passed by the Council of the Town of West Point, Virginia, on the 21st day of April, 1870, and re-enacted and approved on the 22d day of March, 1887.

Be it ordained by the Council of the Town of West Point, Va., that any party or parties investing in property in this town for the purpose of conducting any enterprise, such as manufactories, packing houses, &c., and actually operating the same, they shall be exempt from all corporation taxes upon such property, and all machinery and improvements thereon, for the term of ten years from the purchase of such property.

It is also ordered that the Mayor is hereby instructed to advertise this ordinance in the "MANUFACTURERS' RECORD," a paper published in the City of Baltimore, Md.

E. WILKINSON, Mayor.

**Cotton Machinery FOR SALE.**

The Machinery of a 6,000 Spindle Spinning Mill, consisting of Openers, Cards, Railway Heads and Troughs, Drawing Frames, Slubbing Intermediate, Roving, Spinning and Twisting Frames. All in first-class condition. For particulars apply to

PAWTUCKET THREAD CO.  
PROVIDENCE, R. I.  
Or to C. R. MAKEPEACE, Mill Engineer,  
Providence, R. I.

**For Sale.**

A large vein of Argentiferous Galena Ore, that assays \$50.00 to \$80.00 per ton, Silver, Gold and Lead.

Developed and ready for machinery, with 150 acres of land and fine water power. Ten (10) miles from railroad.

For particulars address

J. W. STEWART,  
Box 304, Knoxville, Tenn.

**STEEL RAILS**  
COMPLETE OUT-FIT FOR  
Logging, Mining and Plantation

RAIL AND TEAM ROADS.

Light Sections Rails and Spikes in stock.  
Locomotives, Logging Cars, etc.  
NEW AND SECOND HAND.  
HUMPHREYS & SAYCE,  
OFFICE NO. 1 BROADWAY, N. Y.

**WM. E. TANNER,**  
No. 1415 Main Street, Richmond, Va.  
Is prepared to furnish promptly  
**LIGHT LOCOMOTIVES,**  
Dummies for Street Railroads,  
Pole Railway Locomotives and Cars,  
ENGINES, BOILERS, & SAW MILLS.

Also, Freight Cars, of all styles, Railroad  
Spikes, Fish Plates, Bolts, Car Axles, Car  
Wheels, Trucks, Links, Pins, and other  
Car Forgings, Bar Iron, Steel Horse  
Shoes.

**FOR SALE.**

1 second-hand 4 horse power boiler and engine; 1 No. 2 Kissel hand punch, second hand; 1 second-hand 4 ft. stove jointer, for butter tubs; 1 wood frame rip saw, new; 1 emery wheel stand, collars on both ends; also, 1 lot S. arm pulleys. The above for sale cheap, or will trade for 24 inch iron planer. Address ULRICH & ALLISON, Rock Falls, Ill.

**Business Opportunity.**

Murray & Benton, machinists and engineers, Wilson, N. C., desiring to close their business, offer for sale all their machinery, consisting of two lathes, planer, drill press, gig saw, emery wheel, wood lathe and numerous small tools, all in splendid order. The shop can be rented or bought.

**FOR SALE.**

**20,000 ACRES**  
**Timber, Coal & Iron Lands**

LOCATED IN

FRANKLIN COUNTY, TENN.,

Near the North Alabama State line, and on the main trunk of the Nashville & Chattanooga Railroad, 100 miles from Nashville, 12 miles from Stevenson and junction of this railroad with the Memphis & Charleston, 27 miles from South Pittsburg, 50 miles from Chattanooga, 10 miles from Cowen, 15 miles from Sewanee, the University of the South.

These lands are surrounded on all sides by iron furnaces and large coal and iron consuming centers. The location is in the midst of the Cumberland Mountains; good average soil, splendid scenery, pure air, good health, and every variety of mineral waters. The forest consists of Pine, Poplar, Oak, Ash, Chestnut, Hickory, Cherry, Black Walnut, and generally every variety of hardwood common to this country, very large, valuable, and in great quantity. The iron ores of brown hematite assaying above fifty per cent. of pure metal are apparently inexhaustible in quantity. The coal consists of three separate and distinct measures: 1st vein, top 4½ to 5 feet, hard grate; 2d vein or middle, 3½ to 4 feet good gas, coking and grate; the 3d vein and lower, 3 to 4 feet, and superior to either of the above, approximating the anthracite. These coals are seen cropping out all over these lands, and in places much thicker, but have not been developed sufficiently to state specifically their great extent or valuable properties, except to say that the quality is apparently everything desired, and the quantity practically unlimited.

The present railroad divides this land in nearly equal parts, and the coal can be reached by a branch road within one and one-half miles, and no obstructions in the way. Splendid sites for furnaces or manufacturing purposes. Stone in great variety, good quality and of great value. The exact acreage to be ascertained by a new survey or measurement. This land can be divided into about equal parts, giving to each half all the minerals, timber and facilities needed, and will be sold and divided in this way if desired. The present owners will take and reserve one quarter interest if allowed to do so. This property has only to be examined by an expert, and its present and prospective money value approximated. Title perfect. Terms, one-fourth cash, balance in one and two years, and price very low. For further information and particulars address

NASHVILLE,  
CARE MANUFACTURERS' RECORD,  
BALTIMORE, MD.

**FOR SALE.**

**30,000 ACRES**  
**Timber & Iron Lands,**

LOCATED IN

Perry County, Tenn.,

On the waters of the Tennessee and Buffalo rivers, about sixty miles west from Nashville, and on the projected Midland and Ohio Valley Railroads. The Midland is now under contract from Memphis to the Tennessee river, 135 miles, and will in the next twelve months reach Nashville. The land is of average soil and quality. The timber is mainly Poplar, White, Black and Mountain Oak, Ash, Hickory, and in fact all varieties of hardwood. The iron ores of brown hematite are found in large abundance all over these lands. Both the timber and iron can be reduced on the spot and shipped in every direction by water or rail, or in the raw state to large consumptive markets. Title perfect. Terms, one-third cash, balance in one and two years. The exact acreage to be ascertained by a new survey or measurement. Thorough examinations solicited. Address

NASHVILLE,  
CARE MANUFACTURERS' RECORD,  
BALTIMORE, MD.

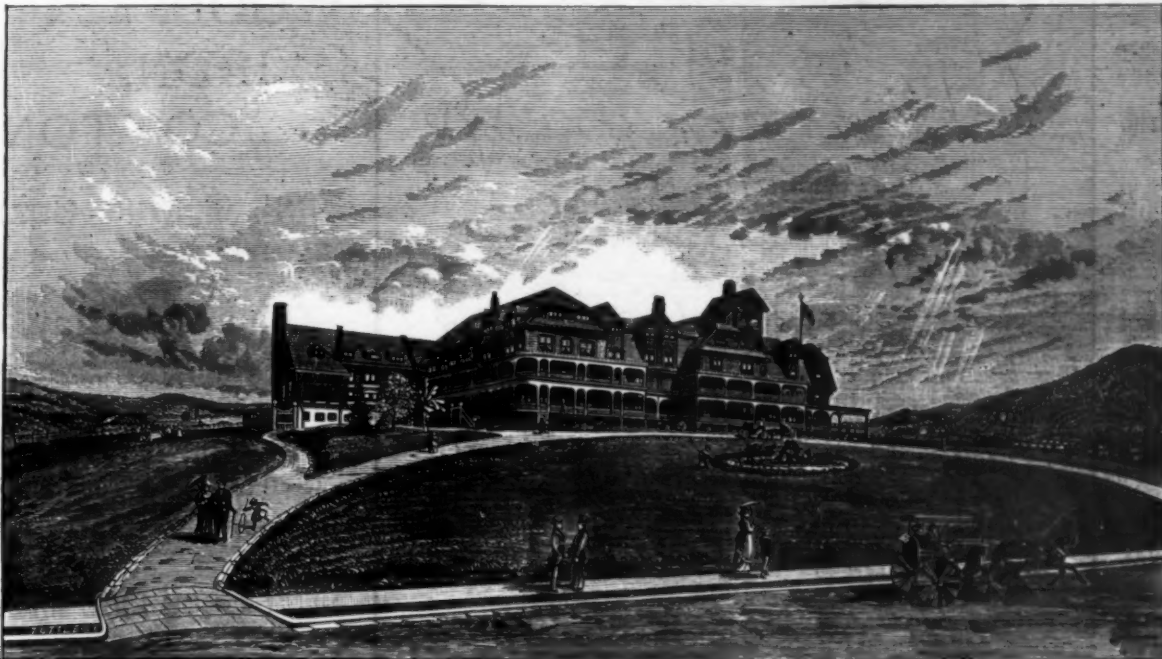


# ANNISTON, ALA.

## The Model City of the South.

**T**HERE is no healthier or more charming place of residence in America than Anniston; built on the slope of one of the highest of the chain of the Blue Ridge in Alabama, it commands scenery that is unapproachable in the State. Nature could not have formed a more beautiful place for man to build a city or given greater natural advantages. The natural drainage is most thorough and complete, while in addition the city is preparing a system of underground sewerage. *A more delightful and invigorating climate cannot be found anywhere:* mild in winter, cool in summer, a thousand feet above the Gulf, with the high and broken chain, range after range in the east, Blue Mountain in the north, Coldwater Mountain in the southwest, make Anniston the *coolest, healthiest and most attractive of any city in the South.* It has the richest agricultural country surrounding and tributary to it in the State, to support a manufacturing and mercantile population. The mountain sides will grow the grape and every kind of large and small fruit to perfection, and the valleys every product of diversified farming. *It is in the heart of the richest mineral district of the South,* and commands the great fields of brown hematite ores on which the great and successful manufacture of iron must in the end depend for quality and profit in every branch of most skillful and best manufactures of iron and steel. It has tributary to it *the best and most extensive pine forests in North Alabama,* that are reached by roads owned and controlled by Anniston citizens, while it has secured to its industries the very best coal mines and coking coal in Alabama. There is no city in America, in proportion to population, that has the manufactures of Anniston, or employs as many working men, or does a larger mercantile business. The industries already in full and profitable operation in Anniston are the **two Woodstock Furnaces** producing six hundred tons of Standard Car Wheel and Malleable Iron per week, and the **two Clifton Furnaces**, tributary to Anniston, producing nearly as much more. **The Car Works** are fully employed turning out forty cars per week, and are introducing new machinery and

larger engines to increase their capacity to twenty cars per day. **The Rolling Mill and Car Wheel Foundry and Steam Forge** are among the largest in the South, of a capacity of two hundred wheels, a consumption of 120,000 pounds of metal per day, exclusive of the Rolling Mill and Steam Forge. These works are being enlarged to meet the increasing demands upon them. **The Cotton Factory** is one of the largest in the South, containing 11,700 spindles, and is running to its full capacity, while the foundry of **Murray & Stevenson**, and machine shop of **Plindar & Co.**, and planing mills of **Miller & Smith** and **Farrar & Co.** employ a large number of men and are crowded with work. The new industries that are now under way and provided for will within the next twelve



ANNISTON INN.

months **Add Four Thousand Additional Working Men to Anniston's Population.** Two of the **Largest Iron Furnaces in the South**, capable of producing two thousand tons of iron per week, are progressing rapidly, and one of the **Largest and most complete Pipe Foundries in the world for the production of Gas and Water Pipe** is under construction,—it will employ nine hundred men.

**The Steel Bloomery**, for the production of Steel Blooms, is nearly completed, and the **Fire-Brick Works of Taylor & Sons** are ready for operation. The **Ninety-Inch Morse Cotton Compress**, with its warehouses, will be ready to receive the coming crop. Forty thousand bales, it is estimated, will be secured to Anniston from the territory that its system of railroads have opened up. The completion of the **Anniston & Cincinnati Railroad** during the present year, that will be owned and controlled by Anniston's citizens, opens up new territory and forms a **New and Shorter Grand Trunk Line to Cincinnati and the great Northwest, and to the Southwest via New Orleans and Shreveport.**

It is only the profits of business and labor that can add to the wealth of a community, add to or maintain the value of real estate, and add to the prosperity of its people. Having this in view, every industry and business in Anniston is established on a *profitable basis.* All its merchants are doing a large and profitable business, far larger than they prepared for or anticipated; it is the same with the manufacturers, while *not a dollar of debt has been created*, either by issue of a bond or placing of a mortgage on any of its old or new industries, leaving their earnings free from fixed charges that must be paid in times of depression as well as of prosperity. *To the investor, either in business, manufacturing or real estate, nowhere else are presented opportunities as safe, secure and certain as at Anniston, or where they can rest on as healthy and solid foundation.* It has trunk line railroad communication with all parts of the United States, and freight rates with the most favored of Southern cities. Two lines of railroads are owned and controlled in the interest of Anniston by its own citizens. *It has the best system of Water Works*, with the purest well water from three hundred feet below the surface, drawn from white quartz sand and gravel, and distributed through the city, with a pressure of 100 pounds to the inch, from a reservoir always full, protecting the city against fire and giving it the lowest rate of insurance. *The city is practically free from debt, and taxation limited to one-half of one per cent.* *The means for education are the very best.* Public Schools of a high grade are provided. One of the finest and best institutes for Young Ladies has been opened, and a College for Boys and Young Men, to which a School of Technology and Chemical Assay Laboratory have been added, is now nearly completed, and the best of teachers and professors secured for both. There are *Churches for all denominations, and Hotel Accommodations that are not surpassed in Europe or America.* The **ANNISTON INN** provides the quiet and comfort of the most luxurious home. *The streets are wide, macadamized, and rolled hard and smooth for pleasant drives.* **STREET CARS AND DUMMY LINES** are being built to different parts of the city, and the **ELECTRIC LIGHT** service enlarged and improved, leaving nothing undone to promote the comfort of its citizens and maintain and increase the value of their property and profits of their business.

**The Anniston City Land Company, or the Bureau of Information,** will give any information desired when applied to, and invite all wishing a charming place in which to live, to do business or to make profitable investments, to visit

● ANNISTON. ●

# Tuskaloosa, Ala.

— \* ALABAMA'S NATURAL PITTSBURGH. \* —

**A Railroad And River Town of 6,000 Inhabitants, in the Coal, Iron And Timber District.**

Healthful Location. Salubrious Climate. School Facilities Unequaled by any other town in the South.

— \* SITUATED ON \* —  
**Queen & Crescent**

— TRUNK LINE, —

IN THE

**Warrior Coal Field**

AND ON THE

**WARRIOR RIVER.**

Only Navigable River touching the

**Alabama Mineral Field.**

Eight Months Navigation. Being Surveyed  
now to be opened all the year round.

All Water Navigation to

❖ **MOBILE** ❖

AND THE

**Entire Gulf and Atlantic Coasts.**

THE

**Tuskaloosa Northern Railroad**

Is now under construction into the

**MINERAL and TIMBER FIELDS.**

— THE —

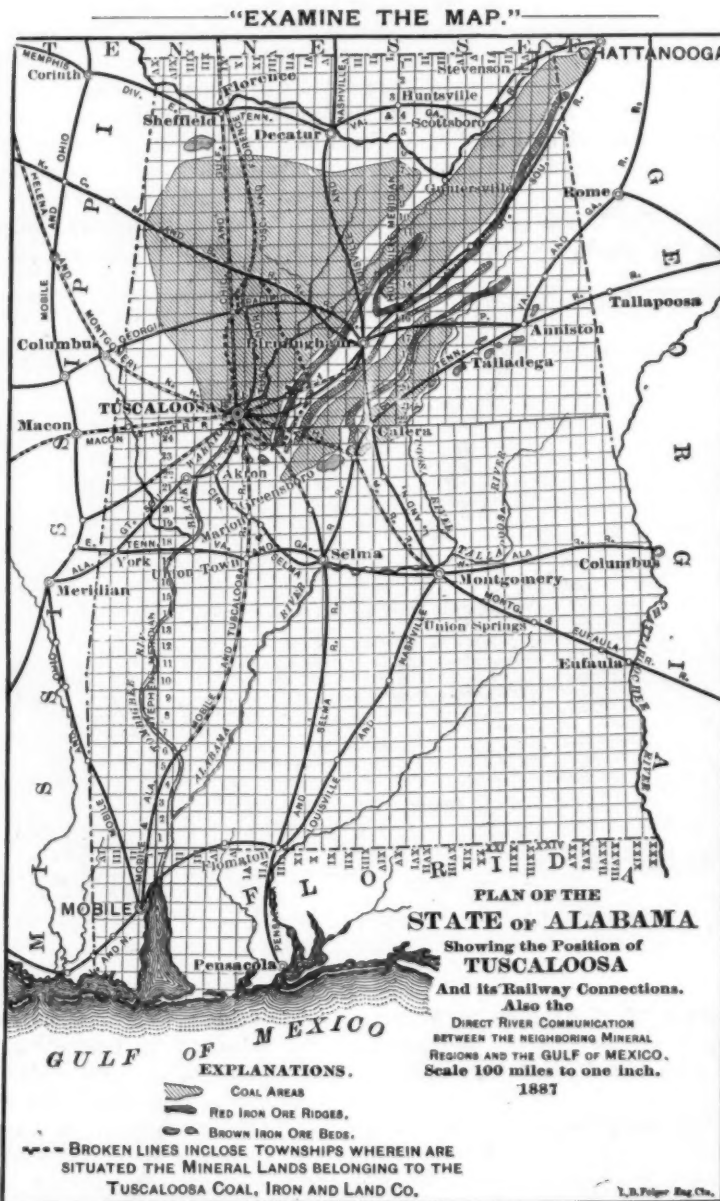
**Macon & Tuskaloosa Railroad**

Will soon be building into the

**COTTON REGION OF MISSISSIPPI.**

**Fine Farming Region**

Around and Below the City.



Superior Inducements

AND

\* ADVANTAGES \*

TO ALL

Manufactories Consuming

**WOOD,**

**IRON,**

**COTTON.**

**FINE COOKING COAL**

In workable veins near city, fully tested.

❖ **The Fire Clay** ❖

Existing in inexhaustible quantities, has been  
practically tested and pronounced

The Best yet Discovered in the South.

**Street Car and Dummy Lines**

NOW BUILDING.

❖ **Water Works and Electric Lights** ❖

TO BE PUT IN AT ONCE.

**COTTON MILL**

In Successful Operation.

ALSO

**LARGE BRICK WORKS**

**COTTON-SEED OIL MILL, &c.**

Manufacturers Seeking Locations in the South have here

**THE GOLDEN OPPORTUNITY.**

Many have availed themselves of it, but such is the wonderful richness of the resources of this section that there is

— ROOM FOR ALL. —

**THE Tuskaloosa Coal, Iron & Land Co.,**

Owning 4,600 acres of city and suburban property, and 40,000 acres of mineral and timber lands, offers liberal inducements to manufacturers  
to locate at Tuskaloosa, Nature's City, and invites correspondence and the fullest investigation of its claims. Address

**W. C. JEMISON,** President Tuskaloosa Coal, Iron & Land Co., **TUSKALOOSA, ALA.**



# DECATUR

## — ALA —

# GREAT ★ INDUCEMENTS

✻ Offered to Manufacturers ✻

★ TO LOCATE IN NORTH ALABAMA. ★

THE **Decatur Land, Improvement & Furnace Co.**

WITH A

**PAID-UP CAPITAL OF \$1,000,000.**

WITH 5,600 ACRES OF TOWN LANDS AND 50,000 ACRES OF MINERAL LANDS, WITH MAGNIFICENT  
MANUFACTURING SITES LOCATED ON THE TENNESSEE RIVER, IS PREPARED TO OFFER  
GREAT INDUCEMENTS TO MANUFACTURERS IN THE WAY OF SITES,  
AND MONEY AT LOW RATES OF INTEREST, AND THE  
BACKING OF A POWERFUL COMPANY.

✻ **TWENTY-SIX ★ INDUSTRIES** ✻

HAVE LOCATED HERE THE LAST FOUR MONTHS.

WATER COMMUNICATION WITH THE MISSISSIPPI RIVER ALL THE YEAR ROUND.

Two trunk lines of Railroad, the Louisville & Nashville and the Memphis & Charleston, cross the river at this point.  
Two more trunk lines in process of construction.

IMMENSE FORESTS OF HARD WOOD AND PINE AND BOUNDLESS QUANTITIES OF COAL AND IRON IN  
EASY REACH. THE WORKINGS OF THE INTERSTATE COMMERCE BILL WILL RENDER  
NORTHERN COMPETITION PRACTICALLY OUT OF THE QUESTION.

The Summers in this region are Cool, the Winters Pleasant and the Locality very Healthy.

CORRESPONDENCE WITH MANUFACTURERS SOLICITED.

ADDRESS ALL COMMUNICATIONS TO

WM. E. FOREST, SECRETARY, - - - - - DECATUR, ALA.

# Florence, Ala.

## County Seat of Lauderdale County.

At Head of Navigation on Tennessee River, and at Foot of Muscle Shoals Canal,  
which will be open Jan. 1st, 1888.

**SITUATED** on a gently undulating Plateau, 200 feet above high-water mark, surrounded by three large creeks of pure free-stone water. It has a Court House, Two Colleges, Four Public Schools, Six Churches, beautiful wide streets, graded and graveled, and shaded with forest trees; Hotels, fine store houses, Masonic, Odd Fellows, K. of H. and L. of H. lodges. A population of 2,500—moral, social and hospitable.

**\* The Scenery on Every Side is Picturesque and Beautiful. \***

SO MUCH SO THAT IT IS CALLED BY VISITORS

**'FAIR FLORENCE.'**

There is no Place on the Continent more Healthful and Salubrious.

## MANUFACTURES.

Within the last six months numerous manufactures have been located here, among the number:

Five Large Blast Furnaces.	One Saw Mill,	One Cotton Mill,	Two Brick Machines and
One Rolling Mill,	One Flour Mill,	One Cotton Compress and Ice	Three Hand-Brick Yards.
Three Planing Mills,	One Wooden-Ware Factory.	Factory.	

There are VAST BEDS OF IRON ORE within a few miles North and  
IMMENSE COAL FIELDS SOUTH

ACCESSIBLE BY RAILROADS NOW BEING RAPIDLY CONSTRUCTED.

By the 1st of January the Nashville & Florence Railroad will be completed, making three lines of railroad, and the river, thus opening up **VAST AREAS OF TIMBER, IRON ORE, COAL, Marble, Limestone, Kaolin, Fire-Clay,** and almost every kind of mineral and product.

**THE LANDS IN THE SURROUNDING COUNTRY ARE FERTILE AND PRODUCTIVE.**

*All kinds of Grain, Grasses and Fruits grow to perfection. Springs and Water Courses are numerous, and grazing for Cattle is abundant for eight months of the year.*

Pamphlets and maps furnished on application to

# Florence Land, Mining & Manufacturing Company.



# GADSDEN, ALA.

Reasons Why Capitalists and Manufacturers

SHOULD MAKE GADSDEN THE FIELD OF THEIR OPERATIONS.

GADSDEN is situated in the midst of the RICHEST MINERAL SECTION OF ALABAMA; is on the West bank of the Coosa River. This stream furnishes Cheap Transportation to the Coal Fields and Iron Veins and Beds that are found all along its banks.

The Sand Mountain, Lookout and Coosa Coal Fields are at our very doors. *This Coal Cokes equal to any Coal in the South.*

The immense forests that cover the mountain and plains, and all along the Coosa and along the five railroads running to Gadsden, will for ages furnish as **CHEAP CHARCOAL AS CAN BE HAD ANYWHERE ON**

**THE CONTINENT.** Limestone is found all around the city,—so Gadsden has in as great abundance, and at small cost, all descriptions of

➤ **Rich Iron Ores, Fine Coking Coals, best class Charcoal, and Limestone for the quarrying.** ⚡

And, as an Iron center, no place in the favored State of Alabama can compare with Gadsden, when we consider our Ore and Fuel supply, our abundant Water, our unequaled Climate, **UNINTERRUPTED HEALTH and FINE TRANSPORTATION FACILITIES.** We have the most **INVITING FIELD** to all seeking locations, either for manufacturing iron in any of its varieties, or for investment in any other industries. Gadsden has to day in successful operation the

## LARGEST CHARCOAL FURNACE IN THE STATE,

Has Four Large Saw Mills, with annual output of twenty million feet of the finest long-leaf Yellow Pine Lumber, three large Planing Mills, one Foundry and Machine Shop, two Gin and Flouring Mills, large Furniture, Sash and Door Factory, two Metallic Paint Mills, Ice Factory, a splendid system of Water Works, 80 pounds pressure, large steam Brick Works, and in course of construction a 100-ton Coke Furnace, being built by the Gadsden, Alabama, Furnace Co.; has stock subscribed for an additional Charcoal Furnace, has a National Bank, Cotton Compress, large Cotton Warehouse, handling 15,000 bales cotton, and a magnificent agricultural country all around us.

➤ **The Gadsden Land and Improvement Company** ⚡  
OWNS 3,000 LOTS,

And invites capitalists and manufacturers to come to Gadsden and see its advantages, pledging themselves to donate to any manufactory locating here, and working twenty-five men or more, **GROUND UPON WHICH TO LOCATE PLANT**, accessible to railroad or river. *Our Railroads afford transportation facilities equal to any point in the South.*

The Rome & Decatur gives close connections with the East Tennessee, Virginia & Georgia and Louisville & Nashville systems, the Anniston & Cincinnati with East Tennessee, Virginia & Georgia and Richmond & Danville, also the Alabama Great Southern Railroad; the Tennessee & Coosa Railroad with Alabama Great Southern, also the Tennessee River at Gunterville and the Central Railroad, when built, from Casselton to Decatur, making us on the short line from Kansas City and the West to Atlanta and the South Atlantic Coast.

**Lots are Sold on the Most Favorable Terms:**

One-third CASH, balance in one and two years.

We have a population of over 4,000, good Schools, and Churches of all denominations; splendid system of Electric Lights, Telephone Communication over the city, also to Rome, Ga. Boats run regularly the year round on the Coosa, carrying U. S. mail and freights from this point to Rome, Ga., a distance by water of 154 miles.

FOR FURTHER PARTICULARS, ADDRESS SECRETARY OF

The Gadsden Land and Improvement Co., ⚡ Gadsden, Ala.

PROBABLY the largest contract ever made for steam boilers for stationary purposes has recently been awarded by the Edison Electric Illuminating Co., of New York, to the Babcock & Wilcox Co. for 8,700 horse-power of their water-tube boilers, to supply three new central stations now in process of erection in the city of New York. It is expected that with economical engines these boilers will develop an indicated horse-power of not less than 15,000, which is greater than that of the most powerful steamship afloat, the "Umbria," which has developed 13,000 indicated horse-power. The awarding of this contract to the Babcock & Wilcox Co. is a merited compliment to their system of water-tube steam boilers, particularly as this is the 35th order received from the different Edison companies for boilers for electric lighting purposes. The Pearl street station has been running nearly six years with 900 rated horse-power of the same kind of boilers, which Mr. C. E. Chinnock, (one of the construction committee of the Edison Co., and who is also the vice-president of the Edison United Manufacturing Co.) says, have given the most perfect satisfaction and have cost practically nothing for repairs in that time; that they have been called upon frequently to furnish a capacity fully 60 per cent. above their rated power, and they have never failed in any case to respond generously with perfectly dry steam. After six years of such experience as this, joined with experience in a large number of other stations in this country and in Europe, it is no wonder that the preference was given to this boiler for these new stations, which are to be the largest electric lighting stations in the world. †

If you contemplate a visit to New York you should send for a copy of a comprehensive, well-written and accurate guide to the city—128 pages and map—entitled "How to Know New York." Sent on receipt of six cents in stamps. Address, Advertising Department, Grand Union Hotel, New York.

THE Palace Hotel, Cincinnati, Ohio, is the best, finest furnished and most complete \$2.00 hotel in America. 250 rooms; 140 front rooms. Complete fire apparatus and iron balcony fire-escapes.

Batts, J. N., Coal Valley, W. Va. Scrubbing machine.....	368,050
Callahan, J. W., New Iberia, La. Stave cross- ing machine.....	367,800
Cloud, W. J., Junction City, Texas. Warning strip for fences.....	367,898
Crain, W. O., Baltimore, Md. Button attach- ing machine.....	368,134
Featherston, G. W., Cedartown, Ga. Cotton chopper.....	368,008
Gilbert, F. B., Jefferson, Texas. Bill or paper file.....	367,971
Hess, Daniel, Henderson, Texas. Cotton chopper, cleaner and condenser.....	368,087
Levy, M. H., Pittsburgh, Miss. Lifting jack.....	368,096
Lynch, H. C., Houston, Texas. Box car door fastener and spark arrester (reissue).....	30,855
Mallon, James, New Orleans, La. Stubble digger and cultivator.....	367,989
McMahon, P. J., New Orleans, La. App. for recovering ammonia in ammonia motors.....	367,993
McMahon, P. J., New Orleans, La. Prepar- ing anhydrous ammonia.....	367,992
Mullins, J. W., London, Ky. Prison door, cell and window.....	367,832
Parham, W. H., Paducah, Ky. Bung faucet.....	367,999
Pierce, G. R., Knoxville, Tenn. Pruning shears.....	367,843
Powell, J. C., Danville, Va. Velocipede.....	368,167
Reilly, R. M., Baltimore, Md. Pipe joint.....	367,999
Robertson, H. C., Charleston, S. C. Com- bined stool and sewing machine cover.....	368,008
Rogers, C. W., Baltimore, Md. Harness- saddle pad.....	368,115
Rogers, D. J., Bardstown, Ky. Heating stove.....	368,116
Schad, Anton, Louisville, Ky. Combined shovel and hoe.....	368,013
Sitwell, H. W., and J., Richmond, Va. Sur- gical bandage.....	367,855
Waggoner, J. N., Bell's Depot, Tenn. Car ventilation.....	368,020



THE KRIEBEL ENGINES WITH  
UPRIGHT OR HORIZONTAL BOILER  
2 TO 20 HORSE POWER.  
ADDRESS  
RICE & WHITNEY MFG CO.  
Chicago, Ill.

**WANTED.** A position as Superintendent of a Cotton Mill by a thoroughly practical man. Have had a large experience in remodeling. Can give the best of references from Northern and Southern manufacturers. Address **SUPT., CARE MANUFACTURERS' RECORD.**

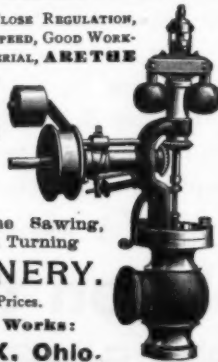
15-in. Double Table Shaping Machine, new.  
 30-in. Shaping Machine, new.  
 10-in. " " Gould & Eberhardt, s. h'ad.  
 Planer, 24x4, second-hand.  
 Planer, 30x4, Lincoln, second-hand.  
 Planer, 30x8, Pond, new.  
 Planer, 24x5, Pond, new. 24 in. x 6 ft.  
 25-in. B. G. F. Upright Drill, new.  
 35-in. " " " " "  
 35-in. " " " " "  
 30-in. Upright Drill, B. G. S. F. "  
 1 30-in. B. G. Prentice Drill.  
 48-in. Old-style Drill, B. G.  
 Engine Lathe, 28x14, new.  
 Engine Lathe, 28x16, new.  
 Engine Lathe, 26x10, new.  
 Engine Lathe, 28x12, "  
 Engine Lathe, 15x6, second-hand.  
 1 Engine Lathe, 20 in. x 8 ft., compound rest, second-hand.  
 1 Engine Lathe, 16 in. x 7 ft., second-hand.  
 Engine Lathe, 30 in. x 16 ft., new.  
 Engine Lathe, 23 in. x 12 ft., "  
 Engine Lathe, 15 in. x 6 ft., B. G. Screw-Cutting.  
 Engine Lathe, 18 x 6 ft., power cross-feed, new.  
 Engine Lathe, 18 x 8 ft., power cross-feed and compound rest, new.  
 Engine Lathe, 20 in. x 8 ft., power cross-feed and compound rest, new.  
 1 11-in. x 5-ft. B. G. Hand Lathe, with Chucks, s. h'ud.  
 1 11 in. x 5-ft. Prentice Eng. " " "  
 6-inch Double Cutting-Off Machine. Wood, Jenson & Co.  
 Patterson Forge with Hood No. 1.  
*Cold-Rolled Shafting, Hangers, Pulleys, &c*  
 AGENTS FOR  
 L. W. Pond Machine Co. Planers.  
 Carrier & Snyder Drills.  
 McMahon & Co. Lathes.  
 Fay & Scott Engine Lathes.

Crusher, Amalgamator, Wash-  
er, Settler, &c., only slightly  
used; a bargain. Also Hoist-  
ing Engines for Mines.

**WM. C. CODD,**  
and 2012 Aliceanna S  
**BALTIMORE, MD.**

**RICHMOND MACHINE WORKS.**  
**RICHMOND, IND.**

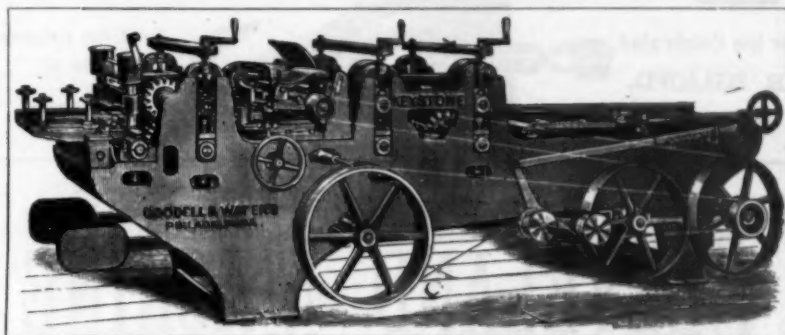
Engines and Boilers, Mills of all kinds, Marine  
Railways, &c. Improved Clay Tempering Ma-  
chinery, Steam or Horse Power. Phosphate  
Machinery, Crushers, Rollers, Mixers, &c., &c.  
**40, 42 & 44 York Street,**  
**NEAR LIGHT, BALTIMORE.**  
Repairing of all kinds promptly done.





# "KEYSTONE"

Rapid Feed Flooring Machine.



SEND FOR DESCRIPTIVE CIRCULAR AND PRICES.

## GOODELL & WATERS, Manufacturers,

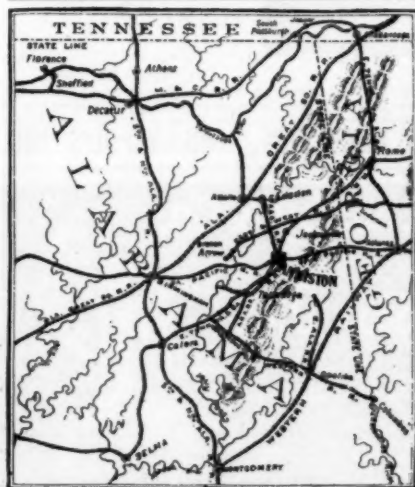
WESTERN WAREROOMS:

11 and 13 S. Canal Street,  
CHICAGO, ILL.

MR. C. L. RICE, MANAGER.

3002 Chestnut Street,

PHILADELPHIA.



— REFERENCES: —  
First National Bank, Anniston, Ala.  
Col. John M. McKieroy, Pres., Anniston City Land Co.

## LEDBETTER & CO. LAND AND LOAN ASSOCIATION.

Incorporated.

Commission Dealers in

Lands, Stocks and Bonds.

— CITY AND MINERAL PROPERTY —

A SPECIALTY.

Capital Stock  
\$100,000

CORRESPONDENCE  
SOLICITED.



ANNISTON, ALA.

## BRIDGEPORT BRASS CO., 19 Murray Street, NEW YORK

— MANUFACTURERS OF —

## Sheet Brass, Seamless & Brazed Brass AND Copper Tubing

BRASS and COPPER WIRE, and RODS,

Gas and Kerosene Burners and Trimmings. **=====** The Celebrated Leader Burner a Specialty.

ELECTRIC COPPER WIRES, Plain and Covered. Particular Attention given to Cutting Blanks and Metals to Order.

Buy "THE NEW SOUTH."

HANDSOMELY BOUND  
IN CLOTH. \$2.50.  
PRICE,

MANUFACTURERS' RECORD CO., Publishers, Baltimore, Maryland.



**BUFFALO HAMMER CO., Buffalo, N. Y., U. S. A.,** Manufacturers of a full line of  
**Solid Cast Steel Hammers, Sledges, Mauls,**



**RAILROAD TRACK TOOLS &c.**

Every Hammer or Tool having our name is fully warranted. Catalogues and discounts sent on application.

## BACNALL & LOUD BLOCK CO. BOSTON, MASS.

Largest Manufacturers of Tackle Blocks in the World.

Manufacturers of the Latest Improved Self-Adjusting ROLLER BUSHED and GENUINE METALINE BUSHED and Iron Bushed Rope and Iron Strapped

**TACKLE BLOCKS.**

CLASP OPEN.



Send for the Celebrated  
**STAR BRAND.**



Improved Harcourt Patent Block.

Send for Catalogue  
 No. 5.



Improved Self-Locking Link Snatch Block.

**THE Silver & Deming**  
 FAMOUS  
**ENSILAGE**  
 AND  
**FEED**  
**Cutters.**

They are more substantial, easier to operate, have greater capacity, are less liable to accidents than any other Cutters. We build nine sizes, six for power, furnished with or without carriers. Our illustrated catalogue, containing also valuable information on the subject of Silos and Ensilage, sent free. Liberal discounts and terms to dealers. Write for prices.

**Silver & Deming Manufacturing Co.**  
 SALEM, OHIO.

Hardware and Gun Trade: Quote our  
**\$5 Clay Pigeon Trap.**

Electrotypes furnished gratis for catalogues. Liberal commissions. 80-page book free. Address  
 LIGOWSKY CLAY PIGEON CO., Cincinnati, O.

**BERNHARD DITZ,** Manufacturer of **Printers' Rollers,** and Roller Composition. Factory, cor. Light and Mercer streets, Baltimore. Prices: Composition, (bulk) 30 cents per lb.; for Casting, also, 30 cents per lb. Orders by Mail promptly attended to.

## SEND TO CLEVELAND MACHINE COMPANY,

143 to 161 Leonard Street, CLEVELAND, OHIO,

FOR PRICES ON THEIR

## Solid Steel Forged Shears AND Scissors.

NEW CATALOGUE AND PRICE-LIST JULY 15, 1887.

**R. R. ROUSE PATENT ELECTRO-PLATED WELL POINT.**

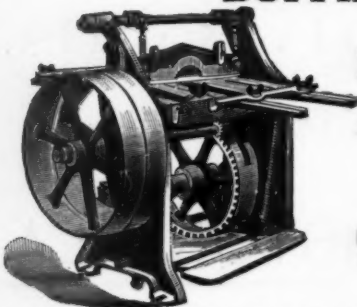


1 1/4	1 1/2	2
\$1.50	\$2.50	\$6.00
2 1/2	3	4
\$9.00	\$12.00	\$35.00
My 1 1/4 Point is 2 1/4 in. long and has 24 1/4 by 1/4 openings.		

A showing the openings before the wire gauze is soldered on. B after wire gauze is soldered on. C showing wire gauze and perforated brass soldered on. These 1 1/4 Points (caliber) are Electro-Plated, with Pure Block Tin inside and outside before receiving the coverings, there being no raw iron to corrode or rust or cause an unpleasant taste in the water. The Electric Process by which it is done is patented and exclusively owned and controlled by me for Driven Well Points in the United States. Warranted not to strip loose where soldered. Write for discounts and circular.

**R. R. ROUSE, INDIANAPOLIS, IND.**

## NIAGARA STAMPING & TOOL CO. BUFFALO, N. Y.



MANUFACTURERS OF  
**FOOT AND POWER SHEARING MACHINERY**  
 AND  
**Presses and Dies for Working Sheet Metal.**

Power Chopping Shears for Nail and Tack Plates, and for Cutting Steel for Cutlery, etc., Works.

**Tinnres' Machines**  
 AND TOOLS OF ALL KINDS.

Corrugating and Curving Rolls for Roofing, Siding and Ceiling. Squaring, Circle, and Hand Shears. Send for our complete illustrated Catalogue and Price List, and Mention this paper.



## MONTAGUE & CO.

MANUFACTURERS OF

\* **FIRE BRICK,** \*  
**Standard Sewer Pipe**  
 AND CULVERT PIPE.

Double Strength, with Improved Sockets.

**CHATTANOOGA, TENN.**

**C. A. Crosby & Co.**  
 MANUFACTURERS OF  
**Presses, Dies,**  
 AND  
**Special Machinery**  
 FOR  
**Sheet Metal Workers.**  
 259, 261 & 263  
**RANDOLPH ST.**  
**CHICAGO, ILL.**

## Covert Manufacturing Company.



The Greatest Emporium in the World for the best Snaps, Chain, Rope and Web Goods, &c., manufactured, is the celebrated works of the

**Covert Manufacturing Co. West Troy, N. Y.**

For Sale by all Jobbers Handling this Class of Goods.

Buy "THE NEW SOUTH." Handsomely Bound in Cloth. Price, 25c. Manufacturers' Record Co., PUBLISHERS, BALTIMORE, MARYLAND.



→ **HARDWARE.** ←**Baltimore WHOLESALE Prices.**

**ANVILS.**  
 Eagle and Vulcan..... \$ 20 c. dis 204  
 Wright's..... 9 1/2 c.  
 Armistage's Mouse Hole..... 9 c.  
 Trenton..... 10 c.  
 Wilkinson's..... 10 c.

**AUGERS AND BITS.**  
 Conn. Valley Mfg. Co..... extra, 60c to \$  
 Douglass Mfg. Co..... No. 1, 60c to \$  
 Ives.....  
 Cook's Douglass Mfg. Co..... dis 58c to \$  
 Griswold..... dis 50c to \$  
 Patent Solid Head..... dis 25 \$  
 Russell Jennings' Auger, Dowell, Machine-  
 Dowel and Hand Rail Bits..... dis 10c to \$  
 Ives' Jennings' Bits..... dis 40c to \$  
 Expansive Bits, Clark's small, 8 1/2; large,  
 10..... dis 35 \$

Expansive Bits, Ives'..... dis 45 \$  
 Expansive Bits Blake's..... \$ 80 and \$ 90, dis 45 \$  
 Hollow Augers, Ives'..... dis 25 \$  
 Hollow Augers, Douglass'..... dis 25 \$  
 Hol. Aug., Bonney's Adjust., \$ 40, dis 40 \$  
 Hol. Aug., Stearns' Adjust., \$ 40, dis 40 \$  
 Hol. Aug., Ives' Expansive, each \$ 4.50, dis 25 \$  
 Hol. Aug., Universal Expansive, each \$ 4.50, dis 25 \$  
 Wood's..... dis 25 \$  
 Gimlet Bits, Diamond..... \$ 7.50 gross, dis 30 \$  
 Gimlet Bits, Diamond..... \$ 7.50 gross, dis 30 \$  
 Double Cut Gimlet Bits, Shephardson's..... dis 40 \$  
 Double Cut Gimlet Bits, Douglass'..... dis 40 \$  
 Double Cut Gimlet Bits, Ives'..... dis 40 \$  
 Morse's Bit Stock Drill..... dis 50 \$  
 L'Hommedieu's Ship Augers..... dis 15 \$

**AWL HAPPS.**  
 Sewing Brass Ferrule..... \$ 3.50 gross—dis 40c to \$  
 Patent Sewing, Short..... \$ 1.00 gross—dis 40c to \$  
 Patent Sewing, Long..... \$ 1.00 gross—dis 40c to \$  
 Patent Peg, Plain Top..... \$ 1.00 gross—dis 45c to \$  
 Patent Peg, Leather Top..... \$ 1.00 gross—dis 45c to \$

**AWLS, BRAD SETS, &c.**  
 Awls, Sewing, Common..... \$ 1.70—dis 35 \$  
 Awls, Shouldered Peg..... \$ 1.45—dis 40 \$  
 Awls, Patent Peg..... \$ 1.45—dis 40 \$  
 Awls, Shouldered Brad, \$ 1.00 gross—dis 25 \$  
 Awls, Handled Brad..... \$ 1.50 gross—dis 40 \$  
 Brad Sets, Aiken's..... \$ 1.00 gross—dis 45c to \$  
 Brad Sets, No. 40, \$ 1.00; No. 43, \$ 1.50, dis 70c to \$  
 Brad Sets, Stanley's Exc., No. 1, \$ 1.00, dis 70c to \$  
 Brad Sets, Stanley's Exc., No. 2, \$ 1.50, dis 70c to \$  
 Brad Sets, Stanley's Exc., No. 3, \$ 1.50, dis 70c to \$

**AXES.**  
 Collins & Co..... \$ 7.00; beveled, \$ 7.25  
 Single Bit, 4 1/2 to 5 1/2 and under..... \$ 6.75 net  
 Single Bit, 5 1/2 to 6 and over..... \$ 7.00 net  
 Single Bit, beveled..... \$ 7.00 net  
 Double Bit, 4 1/2 to 5 1/2 and under..... \$ 6.75 net  
 Double Bit, 5 1/2 to 6 and over..... \$ 7.00 net  
 Double Bit, beveled..... \$ 7.00 net  
 Second quality Axes..... 75 cts less than above

**AXLES.**  
 Sheldon & Co., iron..... 55c off  
 " " steel..... 55c off  
**AXLE GREASE—Fraser's**..... \$ 1.50.

**BALANCES.**  
 Spring Balances..... dis 50 \$

**BELLS.**  
 Hand, Light Brass..... dis 75c to \$  
 Hand, White Metal..... dis 75c to \$  
 Hand, Silver Chime..... dis 25 \$  
 Hand, Globe (Cone's Patent)..... dis 25 \$  
 Gong, Abbe's..... dis 25 \$  
 Gong, Yankee..... dis 40 \$  
 Gong, Barton's..... dis 40 \$  
 Leon Reading..... dis 25 \$  
 Pull, Brook's..... dis 50c to \$  
 Crank, Taylor's..... dis 25 \$  
 Lever, Sargent's..... dis 25 \$  
 Bloomfield..... dis 25 \$  
 Lever, R. & E. M. Co's..... dis 45c to \$  
 Call..... dis 40 \$  
 Cow, Common Wrought..... dis 55c to \$  
 Cow, Western, Sargent's List..... dis 70c to \$  
 Cow, Kentucky, Sargent's List..... dis 70c to \$  
 Cow, Moore's or Dodge's, Genuine Ky., new list,  
 Nos. 1, 1 1/2, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

**BELLOWS.**  
 Blacksmith's Common..... dis 50c to \$  
 Molder's..... dis 50 \$  
 Hand Bellows..... dis 50 \$

**BLIND FASTENERS.**  
 Francis..... dis 40 \$  
 Macrell's..... \$ 1.00 pair \$ 1.00, dis 40 \$  
 Van Sand's Screw Pattern, \$ 1.50 gross, net, dis 60 \$  
 Van Sand's Old Pattern..... \$ 1.50 gross, net, dis 55 \$  
 Merriman's..... new list, net  
 Zimmerman's, 10 1/2 in..... \$ 1.00 gross \$ 1.00  
 Zimmerman's, 9 in..... \$ 1.00 gross \$ 1.00

**BLIND STAPLES.**  
 Barbed, 1/4 in. and larger..... \$ 10 c net  
 Barbed, 3/4 in..... \$ 10 c net

**BLOCKS.**  
 Penfield Blocks..... dis 60c to \$  
 Bagall & Loud..... dis 60c to \$

**BOLTS.**  
 Cast Iron Barrel Shutter, &c..... dis 70 \$  
 Cast Iron Chain (Sargent's list)..... dis 60c to \$  
 Wrought Barrel..... dis 70 \$  
 Wrought Square..... dis 70 \$  
 Wrt. Shutter, all Iron, Stanley's list..... dis 60c to \$  
 Wrought Shutter, Sargent's list..... dis 60c to \$  
 Wrought Sunk Flush, Sargent's..... dis 55c to \$  
 Wrought Sunk Flush, Stanley's..... dis 50c to \$  
 Wrought B. K. Flush, Stanley's..... dis 50c to \$  
 Carriage and Tire, Common, new list..... dis 70c to \$  
 Carriage and Tire, Philadelphia Pattern, dis 75 \$  
 Carriage Bolts, Clarke's..... dis 70c to \$  
 Norway..... dis 75c to \$  
 R. B. & W. Carriage (old list)..... dis 70 \$  
 Tire, American Screw Co's, Philadelphia..... dis 80 \$  
 Tire, "Bay State"..... dis 65c to \$  
 Eagle Philadelphia Tire Bolt..... dis 80 \$  
 Stove..... dis 65 \$  
 Plow..... dis 60 \$  
 Machine..... dis 60c to \$  
 Bolt Ends and Lag Screws..... dis 60c to \$

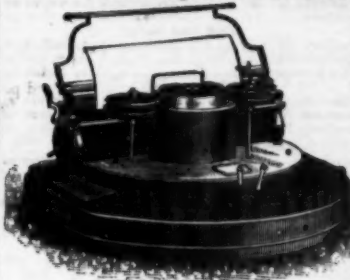
**BORAL.**  
 90 \$ 10 net.

**BRACKS.**  
 Q. S. Backus..... dis 40 \$  
 Barber's..... dis 50 \$  
 Spofford's Patent..... dis 50c to \$  
 Ives' Patent Brack..... dis 50 \$  
 Common Ball (American)..... 40 c net  
 Amidon's..... dis 40 \$

**BOXING MACHINES—WITHOUT AUGERS.**  
 Sweet & Clark upright, 3.50 angular..... 3.00 net  
 Lawrence..... 3.00  
 Hubbard..... 3.00

**The Hammond Type Writer**

Is the Highest Achievement yet reached in Writing Machines.



Although not so well known as its predecessors, it has at once sprung into popular favor, and the manufacturers are taxed to supply the demand. It has been on the market long enough to thoroughly test its wearing qualities, and the judgment of all who have used them is that it is the "no plus ultra" of Type Writers.

Two different styles of type accompany each machine, and other styles can be instantly inserted. The manufacturers of the Hammond solicit business solely upon the ground of superior merit in their particular instrument. An examination, trial and test of the Hammond is solicited by all intending purchasers of Type Writers.

**NOTED FOR** speed, absolutely perfect alignment, uniform impression, changeable type, is light and portable, writes on any width or length of paper, writes on postals, has from 800 to 1,500 less pieces than any other machine, and its work is always in sight. Send for circulars and specimens of its work to

**HAMMOND TYPE WRITER CO.**

75 and 77 Nassau Street,

**NEW YORK.**

Baltimore Office No. 15 N. Charles Street.

Atlanta Office No. 21 Alabama Street.



Conductor's Punch.



Flower Stand.



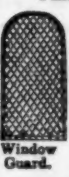
Wrought-iron Fence.



Chair.



Revolving Punch.



Window Guard.

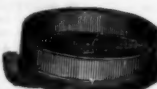
**FRED. J. MEYERS MFG. CO.**

COVINGTON, KY., Manufacturers of

**WIRE GOODS OF ALL KINDS,**

Wrought-iron Fencing, Cresting and Hardware Specialties.

Send for Illustrated Catalogue and Price List.



Sand and Grain Riddle.



Wire Counter Railing.



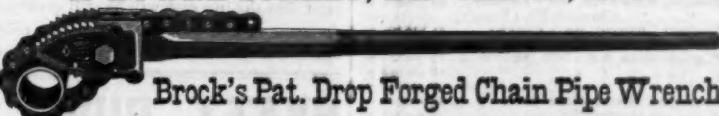
Mocking Bird Cage.

**Wrought Iron. Anti-Friction. IT EXCELS ALL OTHERS**

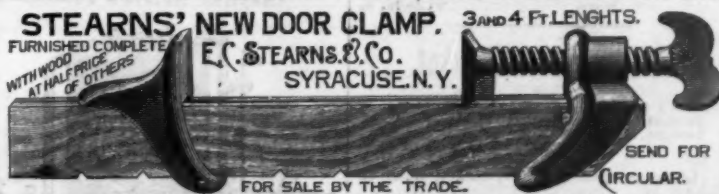
In Security of Door.  
 In Ease of Motion.  
 In Simplicity of Application.  
 This Hanger and Iron-Clad Track costs less than others that are not as good, and it sells at sight. Requires no oil. Has no flange wheels. Can not break or get off the track.

**Cronk Hanger Co.**

ELMIRA, N. Y.

**J. H. WILLIAMS & CO., Drop Forgings,**  
18 BOWNE STREET, BROOKLYN, N. Y.**Brock's Pat. Drop Forged Chain Pipe Wrench.**

The only all-steel Chain Pipe Wrench in the market. The only reversible and interchangeable Chain Pipe Wrench. Six Sizes.

**STEARNS' NEW DOOR CLAMP. 3 AND 4 FT. LENGTHS.**

FURNISHED COMPLETE

E. C. STEARNS &amp; CO.

SYRACUSE, N. Y.



FOR SALE BY THE TRADE.

SEND FOR CIRCULAR.

Look Carefully through this paper and you may find an advertisement of some machinery or other goods that you are in need of. Preserve this copy for future reference.

Phillips, with Augers.....	7.00	9.00..... net
BRACKETS.		
Shelf, plain.....	dis 20c to \$	
Shelf, heavy.....	dis 20c to \$	
BRIGHT WIRE GOODS.		
New list.....	dis 75c to \$	
BULL RINGS.		
Union Nut Co.....	dis 25 \$	
Sargent's.....	dis 60c to \$	
Humason, Beckley & Co's.....	dis 70 \$	
BUTTS.		
Wrought Brass.....	dis 80 \$	
Cast Brass, Fast Joint.....	dis 35c to \$	
Cast Brass, Loose Joint.....	dis 35c to \$	
Fast Joint, Narrow.....	dis 60c to \$	
Fast Joint, Broad.....	dis 60c to \$	
Loose Joint, Japanese.....	dis 20c to \$	
Loose Joint, Jap, with Acorn.....	dis 20c to \$	
Parliament Butts.....	dis 20c to \$	
Mayer's Hinges.....	dis 20c to \$	
Loose Pin, no Acorn.....	dis 20c to \$	
Loose Pin, Acorn.....	dis 20c to \$	
Loose Pin, Acorn, Japanese.....	dis 20c to \$	
Loose Pin, Acorn, Jap'd, Flanged.....	dis 20c to \$	
Tip.....	dis 20c to \$	
Wrought Iron.		
Fast Joint, Narrow.....	dis 75c to \$	
Fast Joint, Lt. Narrow.....	dis 75c to \$	
Fast Joint, Broad.....	dis 75c to \$	
Loose Joint, Broad.....	dis 75c to \$	
Table Butts, Back Flaps, &c.....	dis 70c to \$	
Inside Blind, Regular.....	dis 75c to \$	
Inside Blind, Light.....	dis 70c to \$	
Loose Pin, Light.....	dis 75c to \$	
Loose Pin, Light.....	dis 70c to \$	
Spring Hinges.		
Geer's Spring and Blank Butts.....	dis 30 \$	
Hart Manufacturing Co.....	dis 60c to \$	
American Spring Hinge Co's.....	dis 25 \$	
Gen Spring Hinges.....	dis 25 \$	
Blind Butts, Shepard's, No. 30 and 40.....	dis 75c to \$	
Blind Butts, Shepard's, No. 40.....	dis 75c to \$	
Blind Butts, Shepard's, No. 75.....	dis 70c to \$	
Blind Butts, Lull & Porter.....	dis 75c to \$	
Blind Butts, Huffer.....	dis 50c to \$	
Blind Butts, Standard.....	dis 75c to \$	
Standard Lull & Porter.....	dis 70c to \$	
BOW PINS.		
Humason, Beckley & Co's.....	dis 10c to \$	
Sargent & Co's.....	\$ 1.70 and \$ 1.40; dis 60c to \$	
Hochkiss.....	dis 25 \$	
BUTCHER'S CLAVES.		
Humason & Beckley Mfg. Co.....	dis 20c to \$	
Bradley's.....	dis 25 \$	
Best's.....	dis 25 \$	
1 2 3 4 5 6 7 8		
\$ 1.50 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 6.00 6.50 7.00 7.50 8.00 8.50 9.00 9.50 10.00 10.50 11.00 11.50 12.00 12.50 13.00 13.50 14.00 14.50 15.00 15.50 16.00 16.50 17.00 17.50 18.00 18.50 19.00 19.50 20.00 20.50 21.00 21.50 22.00 22.50 23.00 23.50 24.00 24.50 25.00 25.50 26.00 26.50 27.00 27.50 28.00 28.50 29.00 29.50 30.00 30.50 31.00 31.50 32.00 32.50 33.00 33.50 34.00 34.50 35.00 35.50 36.00 36.50 37.00 37.50 38.00 38.50 39.00 39.50 40.00 40.50 41.00 41.50 42.00 42.50 43.00 43.50 44.00 44.50 45.00 45.50 46.00 46.50 47.00 47.50 48.00 48.50 49.00 49.50 50.00 50.50 51.00 51.50 52.00 52.50 53.00 53.50 54.00 54.50 55.00 55.50 56.00 56.50 57.00 57.50 58.00 58.50 59.00 59.50 60.00 60.50 61.00 61.50 62.00 62.50 63.00 63.50 64.00 64.50 65.00 65.50 66.00 66.50 67.00 67.50 68.00 68.50 69.00 69.50 70.00 70.50 71.00 71.50 72.00 72.50 73.00 73.50 74.00 74.50 75.00 75.50 76.00 76.50 77.00 77.50 78.00 78.50 79.00 79.50 80.00 80.50 81.00 81.50 82.00 82.50 83.00 83.50 84.00 84.50 85.00 85.50 86.00 86.50 87.00 87.50 88.00 88.50 89.00 89.50 90.00 90.50 91.00 91.50 92.00 92.50 93.00 93.50 94.00 94.50 95.00 95.50 96.00 96.50 97.00 97.50 98.00 98.50 99.00 99.50 100.00		
CAN OPENERS.		
American.....	W gross \$ 3.50	
New Idea.....	W gross \$ 3.00	
No. 4, French.....	W dos \$ 2.00, dis 55 \$	
No. 5, Iron Handle.....	W gross \$ 2.00, dis 45 \$	
Sardine Can.....	W dos \$ 7.00, dis 35 \$	
Sprague, No. 1, \$ 1.00.....	W dos \$ 2.00, dis 35 \$	
Universal.....	W dos \$ 2.00, dis 35 \$	
CAPS, PERCUSSION, \$ 1.00.		
U. M. C. F. C. trimmed.....	95c	
U. M. C. F. L. ground.....	65c	dis 20 \$
U. M. C. Can. are ground.....	70c	
U. M. C. Double W. Proof.....	\$ 1.40	
G. D. & S. R.....	35c	dis 10 \$
R. F. 1-10. Elev's.....	95c	
Union, in 1-10's.....	35c	
Hicks Ground Edge.....	35c	
CARTRIDGES.		
Lim.....	dis 60c to \$	
Central Fire, pistol size.....	dis 40c to \$	
" " Military.....	dis 30c to \$	
B. B. Caps, Round Balls.....	1.60	
" Swaged Conical.....	1.75	
NEW LIST ON CARTRIDGES.		
Rim-fire, so short.....	\$ 5 long.....	\$ 6.00
" 50 "		









**Wm. Chisholm & Sons**  
MANUFACTURERS OF  
**SOLID CAST STEEL**  
**Shovels, Spades,**  
**SCOOPS,**  
**AND COAL SHOVELS**  
 Cleveland, Ohio.

These goods are the acknowledged standard wherever there is hard work to be done, and are recommended for RAILROAD, MINING, FURNACE and CONTRACTORS' USE IN GENERAL.

Send for Catalogue.

**The STANDARD STEEL WORKS**  
 Locomotive and Car Wheel  
**TIRES**

Manufactured from  
**OTIS STEEL.**  
 Office, 220 S. Fourth Street,  
 PHILADELPHIA, PA.

**Representatives:**  
 J. E. BELCHER, Room 24, Astor House  
 Offices, New York City.  
 JOHN HARRIST & CO., Church & Re-  
 tor Streets, New York City, N. Y.  
 HORTON, REED & CO., Baltimore, Md.  
 HUBBERT & HUBBERT, 258 W. Main  
 Street, Louisville, Ky.  
 GEO. KIRBY & CO., 123 Central  
 Ave., Cincinnati, O.  
 ANDREW WARREN, 707 N. 2d St.,  
 St. Louis, Mo.  
 J. S. BREWER, 156 Lake St., Chicago,  
 E. L. LEACH, 30 Oliver St., Boston  
 Mass.

ESTABLISHED 1873  
**WHITINSVILLE SPINNING RING CO.**  
 WHITINSVILLE MASS. U.S.A.  
 MANUFACTURERS  
 of SUPERIOR SPINNING  
 AND TWISTER RINGS.

**UPRIGHT DRILLS**  
 A SPECIALTY.  
 ALL SIZES  
 WITH  
 Patent Quick Return  
 AND  
 LATEST IMPROVEMENTS.  
 For catalogues and prices address  
**Bickford Drill Co.**  
 Cor. Front and Pike Streets,  
 CINCINNATI, O.




## IMPORTANT To Wharf Owners.

THE PATENT PILING PROTECTOR CO., BRUNSWICK, GA., is prepared to protect piling from the Teredo and other Marine Pests in any Harbor in the United States, and will erect its plant, which is inexpensive, in any Harbor where a contract is offered, and prepare piling from the timber near at hand. The process is thoroughly effective, indestructible in salt water, and protection for ten years guaranteed. Is fully protected by letters patent. Has been tested for six years; is better than metal covering; as good and for piling in some respects better than crocoting; costs less than one-half as much as metal covering or crocoting. Circulars fully explaining process will be sent upon application. Correspondence solicited.

Address,  
**C. P. GOODYEAR, President,**  
**BRUNSWICK, GEORGIA.**

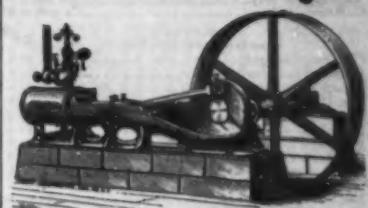


**Bates' Hand Elevators.**  
 Patented April 18, 1871. Reissued July 26, 1876.  
 OVER 6,000 IN USE.

Adapted for Warehouses, Stores, Factories, Hotels, Public Institutions, and every place where merchandise, &c., is transferred from one story to another.

**JAMES BATES, Patentee,**  
 Nos. 13 & 5 President Street. BALTIMORE.

## The "MOGUL" Engine.



NEW DESIGN.  
 Bearings extra long, compact, simple, strong, durable, and of

Superior Workmanship and Materials.

## The BEALL Engine, Boiler AND MACHINE WORKS,

HERWIN MCKAY, CUMBERLAND, MD.  
MANUFACTURERS OF

## The "MOGUL" Engines,

Pulleys, Shafting, Couplings, Coilers, &c.  
 Pulley Turning Machines, Pulley Boring Machines, Shafting Lathes, Shafting Straighteners and Cylinder Boring Machines.  
 Send for low price-lists and big discounts.

## ROOTS NEW IRON BLOWER,



POSITIVE BLAST.  
**IRON REVOLVERS,**  
 PERFECTLY BALANCED.

Has fewer parts than any other Blower. Also, Blacksmith Blowers, Portable Forges, Tuyere Irons, and Gas Exhausters.

**P. H. & F. M. ROOTS, Manufacturers,**  
 CONNERSVILLE, IND.  
 Send for Priced Catalogue.  
 No. 7 CANAL STREET.

**SHURTZ BELTING**  
 IT BELTS THE EARTH AND MAKES THE MOON SPIN LIKE A TOP.  
 MANUFACTURERS OF  
 SHURTZ BELTING CO., St. Louis, Mo.

OUR BELTING  
 is tanned on the surfaces  
 only; the  
**INTERIOR is RAW HIDE.**  
 Send for Our Valuable Book for Engineers and Belt Users. Free.  
 Agents in all Cities. Send for Trial Belt.

Address SHURTZ BELTING CO., St. Louis, Mo.

**The Wainwright Feed-Water Heater**  
 IS CONSTRUCTED WITH  
**Corrugated Copper Tubes,**  
 WHICH ABSORB all EXPANSION and CONTRACTION,  
 Give 50 Per Cent. Increased Heating Surface,  
 WITH FIVE TIMES THE STRENGTH  
 Of the Ordinary Iron Tube.  
 MANUFACTURED BY  
**THE WAINWRIGHT MFG. CO.**  
 65 & 67 Oliver St., Boston, Mass.

SELLING AGENTS.  
 NEW YORK.—F. B. Aspinwall, Manager, 93 Liberty Street.  
 PHILADELPHIA.—Fairbanks & Co., 701 Arch Street.  
 PITTSBURGH.—Fairbanks & Co., 300 Wood Street.  
 Send for Illustrated Catalogue.



Buy "THE NEW SOUTH."





MANUFACTURERS OF  
**GLOBE**  
"STANDING SEAM"  
IRON ROOFING.  
—  
Excelior  
V-Crimped  
IRON ROOFING.  
—  
READY-ROLL  
CAPPED ROOFING.



**Corrugated Iron,**  
All Desired Gauges and  
Sizes.  
Painted,  
Calaminated,  
Galvanized.  
—  
Send for our de-  
scriptive and illus-  
trated catalogue.  
—  
PRICES and ESTIMATES  
promptly furnished.

CRIMPED & CORRUGATED  
**IRON ROOFING,**  
SIDING, METAL  
CEILING, SHINGLES.  
**W.G. HYNDMAN & CO.**  
CINCINNATI, O.

**HOLTON IRON ROOFING CO., NEW LISBON, O.**  
Manufacturers of  
**IRON ROOFING,**  
SIDING, CEILING, &c.  
Millions of feet in  
use. Our work is  
second to none in  
quality and durability  
and construction.  
Agents Wanted Everywhere.

**CANTON IRON ROOFING CO., CANTON, OHIO,**  
SUCCESSORS TO T. C. SNYDER & CO., MANUFACTURERS OF  
**ROOFING**  
Cheaper than Shingles. Fire and lightning proof. Made of best refined charcoal iron, sheet steel and calaminated iron.  
**Corrugated Iron**  
Roofing and Siding, Beaded Iron Ceiling and Siding, Crimped Edge Roofing and Siding, Roof Paint, Roofers' Paper, &c.  
Send for Catalogue, Price List and Samples.

**GARRY IRON ROOFING COMPANY,**  
Largest manufacturers of  
Iron Roofing in the world.  
Manufacturers of all kinds of  
**IRON ROOFING,**  
Crimped and Corrugated Siding,  
Iron Tile or Shingles,  
Fire-Proof Doors, Shutters, Iron  
Frames, for roofs, buildings, &c.  
**IRON ORE PAINT  
AND CEMENT.**  
152-158 Merwin Street.  
CLEVELAND, O.  
Send for Circular and Price  
List No. 99.

**METAL SKYLIGHTS**  
AND VENTILATORS for Mills, Stores and Dwellings.  
Galvanized Iron and Copper Cornices and  
Gutters. Metal Shingles. Sheet Metal Work  
for buildings. Send for illustrated circular.  
**E. VAN NOORDEN & CO.**  
383 Harrison Avenue, - - BOSTON.



**Issues Policies of Insurance after Careful In-  
spection of the Boilers, covering Loss or  
damage to property, and Loss of Life  
and Personal Injury**  
—ARISING FROM STEAM BOILER EXPLOSIONS.—

Full information concerning the plan of the Company's operations can be obtained at the  
COMPANY'S OFFICE, Hartford, Conn., or at any agency.

**M. ALLEN, Presd. W. B. FRANKLIN, Vice-Presd. J. E. PIERCE, Secy.**

—BOARD OF DIRECTORS:—  
**J. M. ALLEN, President.**  
**LUCIUS J. HENDER, President** Atlas Fire Insurance Co.  
**F. W. CHERNEY, Asst. Treas.** Chas. Bros. Bk. Mfg. Co.  
**CHARLES M. BEACH, of Beach & Co.**  
**DANIEL PHILLIPS, of Adams Express Co.**  
**R. W. E. JARVIS, Presd. Coltr's Fire Arms Mfg. Co.**  
**THOMAS O. WOODS, Secretary** Atlas Life Insurance Co.  
**LAWRENCE BRADFORD, of Chase, Lockwood & Bradford.**  
**HOR. H. C. ROBINSON, Attorney-at-Law, Hartford.**  
**GEN. WM. B. FRANKLIN, Vice-President** Colt's Patent  
Fire Arms Manufacturing Co.  
**NEWTON CASE, of Chase, Lockwood & Bradford, Hartford.**  
**NELSON HOLLISTER, of State Bank, Hartford.**  
**CHAR. F. PARRY, of Baldwin Locomotive Works, Phila.**  
**EDMUND A. STEEDMAN, Treasurer** Fidelity Co., Hart-  
ford, Conn.  
**CLAPP SPOONER, N. E. Manager** Adams Express Co.,  
Bridgeport, Conn.

**LAWFORD & McKIN, Agents for Maryland, 22 Second St., Baltimore, Md.**

THE OLDEST. THE LARGEST. THE BEST.  
The best of Testimonials from every State and Territory.  
**ALL KINDS Iron Roofing & Corrugated Iron**  
**PORTER IRON ROOFING CO. CINCINNATI, OHIO.**

**THE EAST BIRMINGHAM IRON ROOFING**  
SEND FOR  
ILLUSTRATED CATALOGUE  
SAMPLES & PRICES  
AND CORRUGATING CO.  
Cor. 11th Ave. & Bibb St.  
**LOWE & TUCKER, Birmingham, Ala.**  
GHATTANOOGA, TENN.  
IRON CLAPBOARDS  
METAL CLEAT  
TWILLED  
CORRU-  
GATED  
PRESSED  
STANDING SEAM  
IRON ROOFING  
OLD STYLE  
V CRIMPED  
METAL  
SHINGLE

**Cambridge Roofing Company,**  
—MANUFACTURERS OF—  
**CROWL'S PATENT STANDING SEAM,**  
Plain Rolled, Corrugated and Crimped Edge,  
Roofing, Siding and Ceiling. Made of Steel and Charcoal Iron; awarded  
first medal by the New Orleans Exposition.  
**CAMBRIDGE, OHIO.**

**SYKES IRON ROOFING CO., NILES, O.**  
**SYKES' IMPROVED**  
Best Roof in the  
World.  
Suitable for all  
classes of  
Buildings.  
Easy Put On.  
All my Iron is  
Hot-Rolled and  
Box Assembled,  
well Painted on  
both sides with  
Best of Paint  
and Pure Lin-  
seed Oil.  
Send for Circular and Price List, and mention this Paper.

**THE SARGENT MFG. Co.**  
**Specialties.**  
NECESSITY, COMFORT, LUXURY.



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.

1. **Sargent's Monarch, Empress and Premier Reclining Chairs.** These Chairs are the best of their class made in the world, having an almost endless variety of positions, made of the best material, and are upholstered to insure perfect rest. They range in price from \$35.00 to \$125.00. We also make a large variety of other styles, including our Favorite, Automatic Nos. 65, 85 and 105, which range in price from \$10.00 to \$15.00.  
2. **Sargent's Invalid Rolling Chairs.** We represent but two of our numerous styles, which include all kinds, for house or street use, reclining and rigid, cane and upholstered.  
3. **Sargent's Solid Comfort Back-Rest and Folding Bed Tray.** Treasures for invalids. Prices of Back-Rest: No. 1, plain, \$5; No. 2, with arms, \$6; No. 3, with arms and head-rest, \$6. Prices of Trays: No. 1, 15x22 inches, \$3; No. 2, 17x26 inches, \$4.  
4. **Earth Closets.** Its merits are incontestably established by 16 years' trial. As a sanitary measure as well as a convenience, it should be adopted in every country house.  
5. **Sargent's Sanitary Arm Commodes** are absolutely orderlies. They have a double seat; broad arms that adjust independently; a metallic enameled pail with flexible rubber and metallic covers.  
NOTE.—We make a specialty of Invalids' Appliances, and aim to supply every known device for the alleviation of suffering. Send for our 80-page Illustrated Catalogue.

**SARGENT MFG. CO.**

814 and 816 Broadway, NEW YORK.

Buy "THE NEW SOUTH."

## SHAFTING DEPARTMENT EDISON MACHINE WORKS.



SALESROOM:

19 DEY STREET, N. Y.

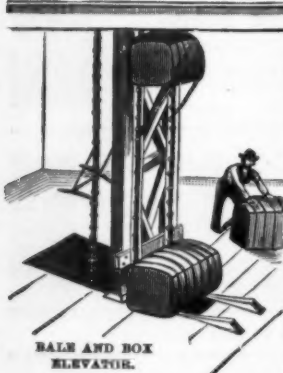
Shafting, Pulleys, Hangers,  
Couplings, &c.

Write for Illustrated Price List with Discount.

Machine Molded Pulley Castings  
for Sale Low.

Roller Chain Belting Co., Columbus, O.

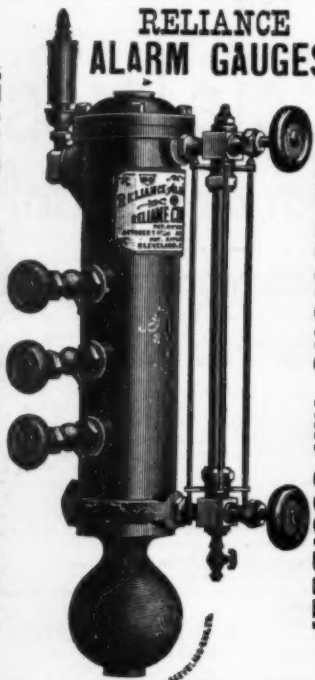
MANUFACTURERS OF

ELEVATORS, CONVEYERS,  
DRIVING BELTS, for HandlingBALE AND BOX  
ELEVATOR.

R. SWORMSTEDT &amp; CO., Agents, Baltimore.

Barrels, Boxes, Bales, Grain, Coal, Ores, &c.  
Illustrated Catalogue sent on application.  
Correspondence solicited.

## RELIANCE ALARM GAUGES.



EXPLOSIONS IMPOSSIBLE.

The only way to prevent boiler explosions and be relieved of fear of loss of life and property is to adopt the **RELIANCE SAFETY WATER COLUMNS**. Have been on the market for 2 years. Warranted for 5 years. Send for Catalogue.

RELIANCE GAUGE COMPANY,

98th, Argyle Building,

CLEVELAND, OHIO.

W. J. CLARK &amp; BRO.

Manufacturers of

## Hydrants.

These Hydrants are made of the best material, and are guaranteed to be entirely non-wasting and non-freezing. The works of these Hydrants can be taken out and repaired without breaking the ground. Send for circular.

38 N. Holliday Street,  
BALTIMORE, MD.

## GEM OF THE SOUTH MILL.

The BEST in the WORLD for grinding Corn, Feed for Stock, Also Meal for Table Use.

GENUINE  
FRENCH BUHR STONES.

Can be operated by any one. Three sizes, from 1 to 5 horse power. Suitable to any power. Satisfaction guaranteed. Prices low. Descriptive Circular FREE. Mention this paper. Address

STRAUB MACHINERY CO., Cincinnati, O.

\$250 SINGLE. \$350 DOUBLE.

With Haws and Tools.

Top Saw Frame can be added to Single Mill when desired. Capacity, 5,000 to 5,000 per day with 3 men. 10 to 15 horse portable engine will drive it. Agents wanted. Send for description and terms.

ROCKWOOD, NEWCOMB &amp; CO.

180 to 190 S. Pennsylvania St., Indianapolis, Ind.

## McShane & Bell Foundry

Fine Iron and Brass Castings Made to Order.

Manufacture those celebrated Bells for Tower Clocks, Court-Houses, Cotton Mills, Factories, &c. Prices and catalogues sent free. Address H. McSHANE & CO. Baltimore, Md. Mention this Paper.



Gap Lathes first.

SHEPARD'S NEW 800

SCREW-CUTTING FOOT LATHE

Foot and Power Lathes, Drill Presses, Scroll-saw Attachments, Chucks, Mandrels, Twist Drills, Dogs, Calipers, etc. Lathes on payment. Send for catalogue of outfits for Amateurs or Artists.

Address, H. L. SHEPARD, Agent, 130 E. Second St., Cin., O.

ESTABLISHED 1860.

KREHL, HAUSER &amp; CO.

TANNERS OF

## OAK Leather.

ALSO MANUFACTURERS OF

## Leather Belting,

Girard, Trumbull Co., Ohio.

SPECIALTIES—Harness, Black and Fair Bridles, Line Leather, Saddle and Shoe Skirting, Russett and Stained Rein<sup>o</sup> Welt, Fly-Net and Collar Leather. Superior Harness Backs, Pump Valve Leather. Write for prices. Mention this Paper.

## THE BAY LINE

FORTRESS MONROE, NORFOLK and the SOUTH.

The Bay Line comprises the New and Elegant Steamers "VIRGINIA," "CAROLINA" and "FLORIDA."

All the Comforts and Luxuries of a First-Class Hotel are afforded the Traveler. Spacious and Elegant Saloons and Staterooms, furnished with an especial view to comfort. Unsurpassed Cuisine, which is made a specialty with this Line. Elegant service and courteous attention. Steamers leave Baltimore daily except Sundays at 9 P. M.

At Old Point Comfort is located the SPLENDID HYGEIA HOTEL, a Delightful Resort at all Seasons of the Year. For Tickets and Information, apply at Company's office,

157 W. BALTIMORE ST., BALTIMORE,

Or on Board of Steamers.

D. J. HILL, Superintendent.

R. BROWN, General Ticket Agent.

Established 17867.

E. HARRINGTON, SON &amp; CO.

Works and Office,

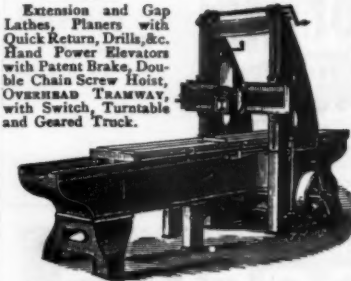
N. 15th St. &amp; Penna. Ave., Phila., Pa., U.S.A.

Manufacturers of a full line of

## Iron Working Machinery.

INCLUDING

Extension and Gap Lathes, Planers with Quick Return, Drills, &c. Hand Power Elevators with Patent Brake, Double Chain Screw Hoist, Overhead Trolleyway, with Switch, Turntable and Geared Truck.

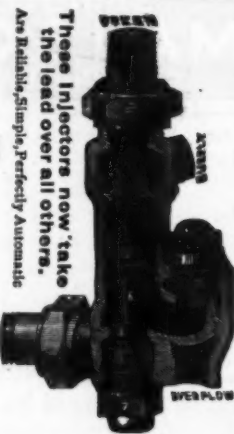


Gear Cutting a Specialty. Send for estimates.

Represented by J. O. MAYNARD, 25 Cortland St., N. Y.; C. E. KIMBALL, 93 Oliver St., Boston; W. BUCHNER, 100 Main St., Cincinnati.

The Very Best in the Market.

WILL NOT GET OUT OF ORDER.



## AMERICAN INJECTOR COMPANY

Detroit, Mich., U. S. A.

## WIRE RAILING

and Ornamental Wire Works.

DUFUR &amp; CO. 36 N. Howard St., Baltimore.

Wire Railing for Cemeteries, Lawns, Gardens, Offices and Balconies; Window Guards, Tree Guards, Wire Cloth, Sieves, Fenders, Cages, Sand and Coal Screens, Iron Bedsteads, Chairs, &c.

## THE BRADSTREET

## Mercantile Agency

HAS NOW BEEN

Under its present successful management for the past seven years.

And during that time its business has more than trebled, while its facilities have proportionately increased.

No expense is considered too great in obtaining and applying to the conduct of the business all possible improvements. With its present system for obtaining and promulgating information, this Agency is justly regarded by its patrons as authority on all matters affecting commercial credit. Its ramifications are greater and its business larger than any similar organization in the world conducted in one interest and under one management.

You are respectfully invited to investigate, and if in need of an Agency, to test its ability to serve you.

CHAS. F. CLARK, President.

Baltimore Office, American Building,

H. KERSHAW, Supt.

## FOR SALE.

One 50-ton Zero Ice Machine at half-price.

Correspondence solicited.

R. P. GERLACH, Box 110, Cleveland, Ohio.

Look Carefully through this paper and you may find an advertisement of some machinery or other goods that you are in need of. Preserve this copy for future reference.

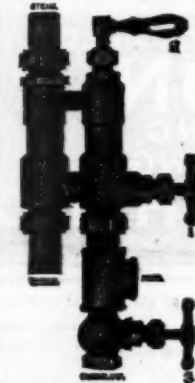
No. 60.



"ECLIPSE" INJECTOR.



RUE'S LITTLE GIANT INJECTOR.



HANCOCK INSPIRATOR.



KEYSTONE INJECTOR.



EBERMAN BOILER FEEDER.

Mention this Paper when you Address us.

## TAPER-SLEEVE PULLEY WORKS.

No. 211 W. 12th Street.

ERIE, PA.

Manufacturers of Taper-Sleeve Wood Belt Pulleys, Adjustable Dead Pulleys, Friction-Clutch Pulleys, Friction



Clutch Couplings, Wood Pulleys, Haves, Taper Sleeve and Compression Couplings, Shafting, Post and Drop Hangers. Correspondence Solicited. Friction-Clutch Pulley.

## CHENEY & HEWLETT, Architectural Iron Works.

Wrought and Cast Iron Work for Building Purposes.

N. CHENEY.

C. HEWLETT.

OFFICE:

301 BROADWAY, NEW YORK.

Book giving strength of wrought-iron girders, beams and cast-iron columns mailed on application.

## PORTLAND CEMENT.

German and English Brands of Best Quality.

Send for tests and all particulars to

ERSKINE W. FISHER

WELLES BUILDING, No. 15 Duane St., NEW YORK.

PANCOAST & MAULE,  
243 and 245 South Third Street, Philadelphia.  
WROUGHT IRON PIPE, FITTINGS, BRASS WORK, TOOLS, &c.

Correspondence solicited from parties requiring any Goods in the above lines.



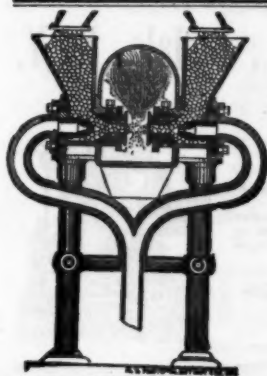
# MECKLENBURG IRON WORKS, Charlotte, N. C.

BUILDERS OF **ENGINES and BOILERS, STAMP MILLS,**  
**CRUSHERS, Circular Saw and Grist Mills, CORNISH PUMPS,**

## MINING MACHINERY.

Cotton Presses, Water Wheels, Shafting and General Machinery.

JOHN WILKES, Manager.



Sectional View of Pulverizer.

## PNEUMATIC PULVERIZER.

The principle of pulverization consists in the employment of

### TWO POWERFUL OPPOSING CURRENTS

of dry super-heated steam, so arranged that they continuously charge themselves with crushed or granulated material, and by the great force and velocity of the steam currents the minerals are dashed against each other with such power of concussion as to cause the hardest ores to be pulverized to any degree of fineness desired. The high temperature of the super-heated steam currents employed, through which every minute particle of ore must pass, causes them to become very hot and dry, which produces a beneficial effect upon sulphurets and ores containing rusty gold. The light weight and simplicity of construction of the Pulverizer, the extremely small and inexpensive wearing parts are the WONDER and SURPRISE of all who witness its operation. The Company are prepared to furnish complete plants for pulverizing

10 to 200 Tons Per Day,

including a Sectional Steam Boiler supplying all the power required.

### PNEUMATIC PULVERIZER COMPANY,

L. F. HOLMAN, Pres.

F. A. LUCKENBACH, Supt.

2 and 4 Stone Street, New York.

WRITE FOR PARTICULARS.

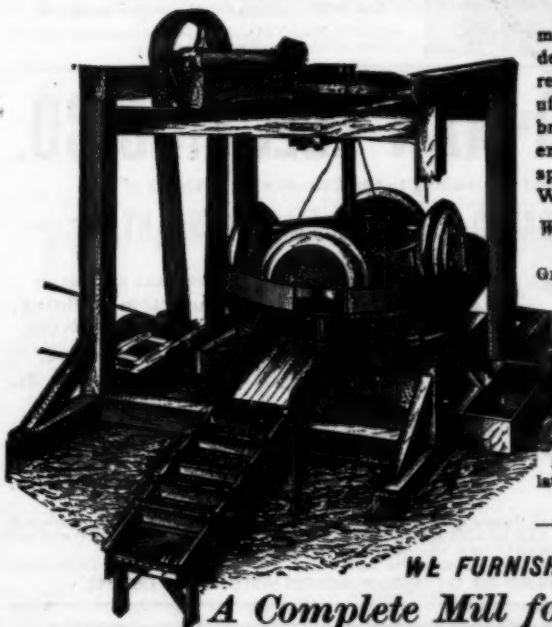


### ARCTIC ICE MACHINE MFG. CO.

Works, 4, 6, 8 & 10 West Street, Cleveland, O.

Manufacturers of Machines for Making Ice and for Refrigerating Breweries, Pork Houses and buildings of all kinds requiring a steady, low temperature. Over 100 of our machines now in use. Send for any particulars desired. P. O. Box 98, Cleveland, Ohio, or P. O. Box 948 Cincinnati, Ohio.

## WISWELL Ore Pulverizer and Amalgamator COMBINED.



The following testimonial from Mr. Marsden, of the firm of Farrell & Marsden, manufacturers of stone-breakers & ore-crushers, Ansonia, Conn., speaks volumes for the Wiswell Mill:

Wiswell Electric Mining Machinery Co.:

GENTLEMEN: After carefully inspecting your mill and seeing it in operation, I do not hesitate to say that it is one of the best, if not the best pulverizer and most complete gold saving machine I have ever seen.

Please accept congratulations for your success.

B. L. MARSDEN.

WE FURNISH

A Complete Mill for \$2,500.

DELIVERED ON BOARD CARS.

For further information address

## WISWELL Electric Mining Machinery Company,

A. A. REEVE, Treas.

4 Post-Office Square, Boston, Mass.

## “THE NEW SOUTH.”

Price \$2.50. Handsomely Bound in Cloth.

MANUFACTURERS' RECORD Co., Publishers.

## M. C. BULLOCK MFG. CO.

MANUFACTURERS OF

Diamond Pointed Rock Drills,  
STEAM ENGINES and BOILERS,

Lane's Patent Band Friction Hoisting Machinery,

FOR MINES, BLAST FURNACES, DOCKS, ETC.

STRAIGHT LINE ENGINES.

GENERAL OFFICE:

135 Jackson St., Phenix Building, Lake and Tullman Av.,  
CHICAGO, U. S. A.

## The Little Giant Excavator.

—A LONG FELT WANT SUPPLIED.—

For DITCHING, EXCAVATING

Loading Wagons

and Cars, Etc.

50 TO 100 PER CENT. SAVE  
IN LABOR.

Capacity of Machine 500 to 700 cubic yards per day. Self propelling. Easily moved. Being built entirely of steel, is both strong, light and a very substantial machine. Can be used on flat-boat for dredging ditches, irrigating or digging canals. Contractors and railroads promptly furnished with estimates for excavators of every description.



Address VULCAN IRON WORKS, Toledo, Ohio.

## BACON

Winding Engines,  
Furnace Hoists,  
Mine Hoists.

(With or without Boilers.)

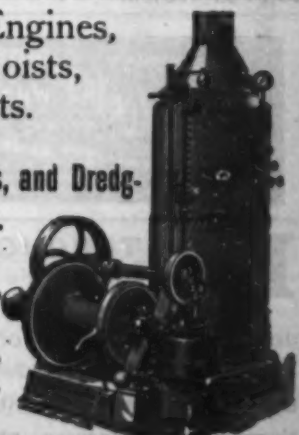
“Mining Plants,” Concentrating Works, and Dredging Machinery Furnished Complete.

COPELAND & BACON,

85 Liberty Street, New York.

309 Arch Street, Philada.

References: { Croton Magnetic Iron Mines, Brewster's, N. Y.  
Crown Point Iron Co., Crown Point, N. Y.  
Belvidere Iron Co., 30 Broadway, N. Y.  
San Island Chemical Co., Buzzards, S. C.



## BROWN & KING, MANUFACTURERS OF COTTON MILL SPECIALTIES.

Roller Covering, Loom Pickers and Strapping.

Dealers in Roller Coverers, Stock and Tools; Cotton and Woolen Mill Supplies.

Full Line "Hick's" United States Standard Ring Travelers, Mill Wire Goods Spring Cotters, Belt Hooks, Lacing, &c., kept constantly on hand.

Wrought Iron Pipe Fittings and Brass Goods. Southern Agents for the celebrated "B. C. & D. Oak Tanned Patent Lap Belting, Galvin Compound Wedge Gate Valve Imhauser's Watchman Time Detectors, Diamond Emery Wheel Machine Co., &c.

Office and Salesroom No. 62 S. Broad Street. ATLANTA, GA.

## D. SAUNDERS' SONS,

MANUFACTURERS OF THE ORIGINAL

TRADE **I.X.L.** MARK.

Pipe Cutting and Threading Machine.

BEWARE OF IMITATIONS. None genuine without our Trade Mark and name. Also

Patent Wheel Pipe Cutter

STEAM AND GAS FITTERS' HAND TOOLS,

Pipe Cutting and Threading Machine

For Pipe Mill Use a Specialty.

Send for Catalogue B.

YONKERS N. Y.



## NATIONAL WIRE & IRON CO.

DETROIT, MICH.,

Manufacturers



**WIRE CLOTH** Galvanized, Iron and Steel, Brass & Copper.

ALSO A FULL STOCK OF

**Galvanized Poultry Netting.**

WRITE FOR DISCOUNTS.

## WIER & WILSON

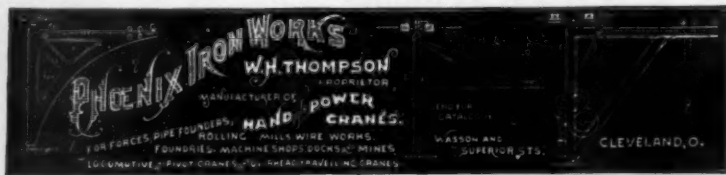
DIRECT REPRESENTATIVES:

HUBBARD & O.	Axes, Shovels, Hoes and Saws.
AMERICAN SREW COMPANY,	Screws, Bolts, Wire Nails, &c.
A. FIELD & SONS,	Tacks, and Nails.
WHEELING HINGE COMPANY,	Wrought Goods, Butts, &c.
OLIVER BROTHERS & PHILLIPS,	Heavy Hardware.
THE SHELTON COMPANY,	Philadelphia Carriage Bolts.
J. P. TOLMAN & CO.	Braided Sash Cord.
JOHN SOMMERS' SON,	Faucets.
NICHOLSON FILE CO.	Files.
HARTFORD HAMMER CO.	Hammers and Sledges.
THE HENRY O. HART MFG. CO.	Screen Frames, Lull & Porter, Blinds, Spring Hinges, &c.
LAWSON & BRENNER,	Forks.
HOLROYD & CO.	Stocks and Dies.
BAKER CHAIN & WAGON IRON MFG. CO.	Wagon Hardware, Links, Rings, &c.
OLARKE BROS. & CO.	Bolts, Nuts, etc.
BRANFORD LOCK WORKS.	

Office, No. 14 W. German Street,

CHARLES H. WIER.  
JOHN K. WILSON.

**BALTIMORE, MD.**



**LOOK THROUGH** the advertising pages carefully. They contain the announcements of the largest and most reliable houses in the country manufacturing and dealing in machinery of all kinds, mill, factory, mine and railroad supplies, hardware, roofing, builders' material, etc. If in need of anything herein advertised, write to the advertisers for catalogues, prices, &c.



## THE IMPROVED FLORIDA STEAM HEATER

The best and most complete House Heater in the world. Self-feeding, automatic, portable and saves all expense of brick-work. Most economical. Carries steam from 10 to 12 hours without attention. Compact. 14 sizes, from 4 to 6 feet high. Anti-clinker grate, easily shaken, no dust. Sales larger than the combined sales of all reputable Steam Heaters.

**3500 in ACTUAL USE,** all giving the best satisfaction. Estimates furnished on application. Send for Illustrated Catalogue. Address

**PIERCE, BUTLER & PIERCE MFG. CO.,**  
SOLE MANUFACTURERS, SYRACUSE, N. Y.  
GENERAL AGENCIES  
(CRANE BROS. MFG. CO., Chicago, Ill.)  
(JAS. B. ROBERTSON & CO., Baltimore, Md.)  
(N. G. NELSON MFG. CO., St. Louis, Mo.)  
(R. TABER & SON, Chicago, Ill.)  
(JAMES F. WOOD & CO., Philadelphia, Pa.)

## THE STEWART HEATER CO., Buffalo, N. Y.

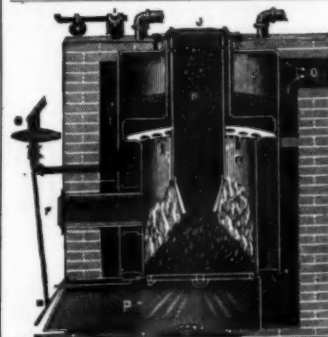
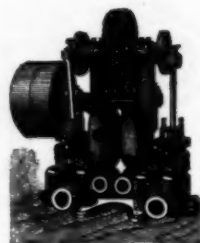
Nos. 19 and 21 CLINTON ST.

**Do You Want to Economize?**

The Stewart Heater is the only Feed Water Heater made which prevents scale in boilers and saves 25 per cent. of fuel bill. Send for descriptive catalogue and price-list of

Heaters, Boiler Feed Pumps, Flue Cleaners, etc.

—It will pay you to correspond with us before purchasing.—



## THE DUNNING Patent Wrought-Iron Boiler,

With Self-Feeding Coal Magazine,  
• IS THE BEST FOR •

**LOW PRESSURE STEAM HEATING**

And Insures a Warm House Day and Night.

Over 13,000 in use! Keeps Steam up Constantly.

Also, Steam Engines & Boilers of all kinds & Machinery generally

MANUFACTURED AT THE

New York Central Iron Works, 77 Exchange St., Geneva, N.Y.

Send for Illus. Catalogue with full description and price-list.

AGENTS WANTED. N. B.—Correspondence solicited from Architects and persons building.

## SAWYER-MAN ELECTRIC CO.

Licensed by and Succeeding to the Commercial Business of the

**CONSOLIDATED ELECTRIC LIGHT COMPANY.**

OWNERS

OF THE

**SAWYER-MAN**

**PATENTS.**



GENERAL OFFICES:

Mutual Life Building,  
No. 32 Nassau St., N. Y. City.

BALTIMORE OFFICE:

No. 217 E. Fayette St.

PHILADELPHIA OFFICE:

No. 205 Walnut Place.

BOSTON OFFICE:

No. 33 Federal Street.

The DYNAMO of this Company is AUTOMATIC in its regulation, and will maintain a UNIFORM LIGHT with ALL or ANY PORTION of the lights in Circuit. Our LAMP will not BLACKEN and will MAINTAIN its CANDLE POWER during its Guaranteed life. Plans and Estimates Furnished for all kinds of Incandescent Lighting. ESTIMATES FURNISHED FOR THE THOMSON-HOUSTON SYSTEM OF ARC LIGHTING.

## JOHN STEPHENSON COMPANY NEW YORK



**TRAMWAY CARS** OF EVERY DESCRIPTION.  
LIGHT. ELEGANT. DURABLE.

**CLEVELAND TWIST DRILL CO.** Send for Catalogue } 94 & 96 West-st., Cleveland, O.  
and prices. } 101 Chambers-st., New York.





**— DAVID BOYLE, —**

521 W. MONROE STREET, - - CHICAGO, ILL.

PATENTEE AND BUILDER OF THE

**BOYLE ICE MACHINE  
AND REFRIGERATING APPARATUS.**

The Most Simple, Reliable, Durable and Economical in Existence.

**WHAT PEOPLE SAY.**

"I consider it the greatest improvement that has ever been made in breweries."—FRED. PARST, President Ph. Best. Brewing Co. "We are thoroughly satisfied with your machine, and we believe it is superior to any other in the market to-day."—HENRY G. KUERT, President Atlanta City Brewing Co., Atlanta, Ga.

Estimates for Ice or Refrigerating Machines furnished on application.

Refer to over 125 Machines in successful operation.

**BOUGHT.****TESTED.****ADOPTED.**

THE EDISON CO'S The Babcock &amp; Wilcox Boiler.

HAVE GIVEN

**35 ORDERS**

FOR

**The Babcock & Wilcox Boiler.**

FIRST ORDER FOR

Menlo Park, N. J., 1878, - 75 H. P.

LAST ORDER FOR

New York Stations, 1887, - 8,700 H. P.

Total of the 35 Orders,  
14,230 H. P.

—August, 1887.—

[Copy.]

The Edison

[Dictated.]

United Manufacturing Co., 65 Fifth Avenue.

New York, June 30th, 1887.

THE BABCOCK & WILCOX CO.,  
30 Cortlandt Street, New York City.

GEORGE BABCOCK, Esq., President.

MY DEAR SIR:

In answer to your inquiry, in regard to the Babcock & Wilcox boilers in use at the Pearl street station since the fall of 1881, it gives me pleasure to state that these boilers have been subjected continuously to the most severe use it is possible to put a boiler to, and frequently they have been run to a capacity fully 50 per cent. above their rated power; and yet, I am free to say, in that time they have not given us the slightest trouble, and the amount that they have cost for maintenance of the pressure parts has, covering that period, been practically nothing. They gave plenty of dry steam, and have been absolutely tight at all times.

The boilers have shown unusual ability to carry a constant pressure under the extreme and sudden fluctuations which are unavoidable in an electric-light station.

While I was in charge of the Pearl street station I taxed these boilers for more than I believed they would stand, frequently, and I am perfectly willing to state that in no case did they fail to respond generously—so much so that I look upon them as a friend; and I am quite sure it is everyone's duty to speak well of "a friend in need, as well as in deed."

Believing this will be satisfactory, I remain,

Very truly yours,

[Signed.]

FOR

C. E. CHINNOCK, Vice-President.

EDISON STATIONS.

[Copy.]

Construction Committee

FOR

Edison Electric Illuminating Co., of New York.

Committee.

E. H. Johnson,  
C. H. Coster,  
C. E. Chinnoek,  
John I. Beggs.

ENGINEER'S OFFICE,

Room 55, 16 Broad Street.

New York, July 28th, 1887.

Engineer,

J. H. Vail.

THE BABCOCK &amp; WILCOX CO.,

30 Cortlandt Street, City.

GENTLEMEN:

You are hereby notified that your proposals are accepted for water tube boilers, to be used in the three new stations of the Edison Electric Illuminating Company of New York City.

The horse-power required in these three stations will aggregate 8,700 horse-power.

I enclose you herewith contracts in triplicate, covering the boilers now required for station in 56th street.

Please execute contract and return two copies to me.

[Signed.]

Yours truly,

J. H. VAIL,

Chief Engineer.

Enclosures.

**The CALDWELL PATENT SPIRAL STEEL CONVEYOR,**

Made of Steel, Double Bolted, Double Collared and Extra Strong Couplings.

SPECIALLY ADAPTED TO USE IN HANDLING COTTON SEED AND ALL ITS PRODUCTS, FERTILIZERS AND PHOSPHATES.



Dealer in Mill and Grain Elevator Supplies.

Can Ship from Pittsburgh or Chicago.



THIS BUCKET is of one piece steel. No seam. No Rivets. Light, strong, durable. Discharges well at high speed.

**H. W. CALDWELL,**131 and 133 West Washington Street,  
CHICAGO, ILL.**LINK BELT MACHINERY.**

\* Elevating \* and \* Conveying \* Machinery, \*

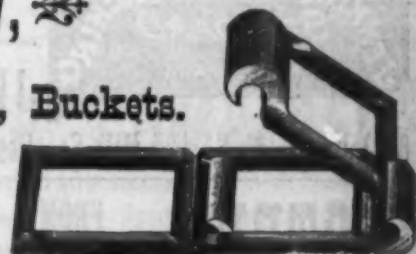
(EMPLOYING EWART CHAIN.)

Sprocket Wheels, Traction Wheels, Shafting, Pulleys, Buckets.

Send for New Catalogue containing all the latest improvements in Elevators and Conveyors.

**BURR & DODGE,** 39 South Holliday Street, Baltimore, Md.

123 and 125 N. 5th St., Philadelphia, Pa.

LINK-BELT MACHINERY CO.,  
CHICAGO, ILL.**THE MANUFACTURERS' RECORD**

is the most thorough, complete and authentic source of information on Southern industrial affairs in existence. The subscription price is only \$3.00 a year. Some of our subscribers think every issue is worth that much. Try it for a year. Send in your subscription to-day. Don't wait until to-morrow; you may forget it.

## Brick Makers' Supplies.



### PERFECTION BRICK PRESS,

An easy-working, quick-operating and powerful press. Will successfully press brick made on any Brick or Tile Machine.

**The Wrought-Iron Tempering Wheel,**  
The most thorough mud temperer known. Tempers faster, mixes better and runs lighter than any wheel made.

**Barrows, Trucks, Molds, Kiln Doors, &c.**

Write us for prices.

**C. W. RAYMOND & CO.**  
DAYTON, O.

Mention Manufacturers' Record.

## The Spiral Pug Mill — AND — QUAKER BRICK MACHINE.

Capacity 40,000 Perfect Brick Per Day

Great Saving in Labor and Expense

We contract to furnish complete Brick-yard outfit, — Engines and everything needed complete. Write for our handsomely illustrated catalogue, containing valuable information. Estimates furnished. Correspondence solicited. Address

**FLETCHER & THOMAS, Indianapolis, Ind.**

Mention Manufacturers' Record.



## WALKER MANFG. CO.

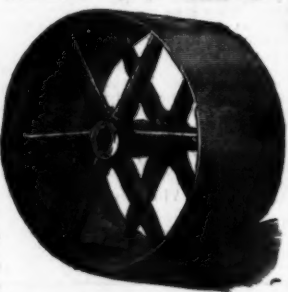
Shafting,  
Hangers,  
Pulleys.

Pulley Castings and  
Machine-Molded

**GEARING**  
A SPECIALTY.

Cleveland, - Ohio.

Estimates furnished. Write  
for Gear and Price-Lists A.



### Lightning Well Sinking Machinery.

The Largest Manufacturers of Well Sinking  
and Prospecting Tools.

We have sunk 500 feet in 10 hours with the revolving process, 100 feet in 40 minutes by the jetting process, and 196 feet in 10 hours without removing the tools from the well by the hydraulic process. We have averaged 1 foot in 10 minutes, to a depth of 600 feet, with our diamond-pointed rock drills.

We issue an encyclopedia of well-sinking appliances, containing 700 engravings, illustrating and describing all the practical tools used in well sinking. We also manufacture wind mills, artesian pumping engines and appliances. We will send this book on receipt of 25 cents for mailing. Drillers and agents wanted. Can direct purchasers to places where wells are wanted. Address

**The American Well Works,**  
AURORA, ILL., U. S. A.



## The ORIGINAL UNVULCANIZED PACKING.



\* Called the Standard, \*

AS IT IS THE PACKING BY WHICH ALL  
OTHERS ARE COMPARED

Accept no packing as JENKINS' PACKING  
unless stamped with our "Trade Mark."

**JENKINS BROS.**

69 John St., N. Y. 105 Milk St., Boston. 13 S. Fourth St., Phila.

## STEEL CASTINGS

FROM 1-4 to 15,000 lbs. WEIGHT.

True to pattern, sound, solid, free from blow-holes, and of unequalled strength.

Stronger and more durable than iron forgings in any position or for any service whatever.

40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of this steel now running prove this.

CRANK SHAFTS and GEARING specialties.

STEEL CASTINGS of every description

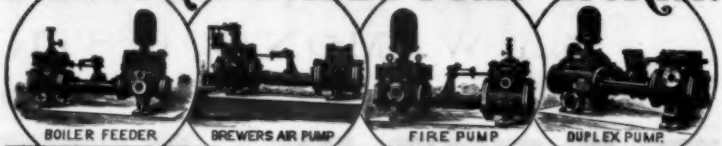
Send for Circulars and Prices to

**CHESTER STEEL CASTINGS CO.**

Office, 407 Library Street, Philadelphia.

Works, Chester, Pa.

## DEAN BROS. STEAM PUMP WORKS.



**INDIANAPOLIS, IND.**

### WHY THIS IS PUT HERE!

For the reason that if you are interested in raising water or other liquids by steam power, we wish to call your attention to the

**THE CHEAPEST AND BEST STEAM PUMP IN THE MARKET. PRICES LOWER THAN ANY OTHER.**

More Efficient, Simple, Durable, and more Economical, both as to running expenses and repairs, than any other Steam Pump.

For Mining, Railroad or Steamboat use, Paper Mill, Chemical or Gas Works, Tannery, Brewery or Sugar Refineries, Draining Quarries, Cellars or Plantations, Irrigating or Hydraulic Mining.

Call or write for our new 66 page Illustrated Descriptive Book containing Full Particulars, Reduced Net Prices, and hundreds of A-1 Testimonials. Mailed Free.

**Pulsometer Steam Pump Co., 83 John Street, N. Y.**



## STEAM PUMPS.



**VALLEY MACHINE CO. EASTHAMPTON, MASS.**



### THE VOLKER & FELTHOUSEN MFG. CO.

MANUFACTURERS OF  
BUFFALO DUPLEX STEAM PUMPS.

#### For Sale at Factory Prices by

A. Allen, New York; S. C. Nightingale & Childs, Boston; Henry I. Ruel, Philadelphia; Thos. J. Bell & Co., Cincinnati; Shaw, Kendall & Co., Toledo; The Geo. Worthington Co., Cleveland; Pond Engineering Co., St. Louis and Kansas City, Mo.; Goulds & Austin, Chicago; Kennedy & Pierce Machinery Co., Denver; Sheriff & Ashworth, Pittsburgh; Jos. Baur, Manchester, Mich.; Jas. Jenks & Co., Detroit; Wickes Bros., East Saginaw; Adolf Lettelt, Grand Rapids; E. F. Osborne & Co., St. Paul; Joshua Hendy Machine Works, San Francisco; Flynn & Emrich, Baltimore; Forties, Laddell & Co., Montgomery; Bailey & Leiby, Charleston, S. C.; O. B. Goodwin, Norfolk; Rundle, Spence & Co., Milwaukee; Columbus Supply Co., Columbus, O.

## STEAM PUMPS

— FOR EVERY DUTY. —

BEST MATERIALS ONLY USED.

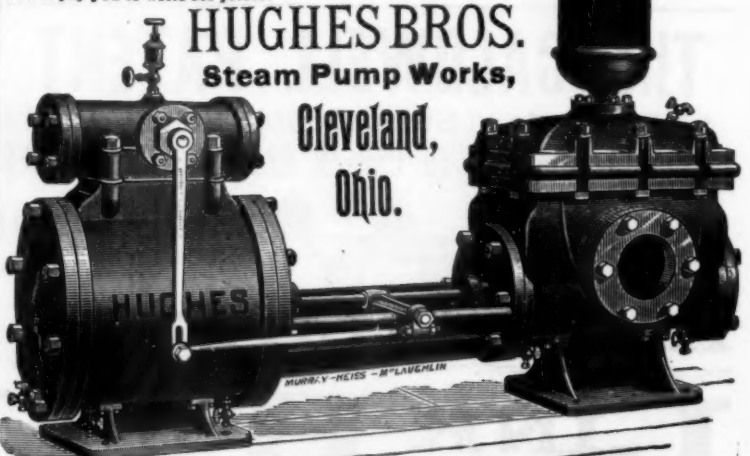
FULLY GUARANTEED AND TESTED.

It will pay you to write for prices.

### HUGHES BROS.

Steam Pump Works,

Cleveland,  
Ohio.



Direct and Double-Acting Pump for general service.

## Shafting, Hangers.

Constructors of every  
Description made.

Stationary, Distillery  
Mill and Boiler Work.

JNO. N. MARQUETTE, 118 W. Falls Ave., {Near Pratt Street} BALTIMORE, MD.

## SAVE YOUR POWER!

Prevent your Belts from Slipping by using

**The National Pulley Covering.**  
EASILY APPLIED, CHEAP, EFFECTIVE.

No Rivets; can be put on by any one. Satisfaction Guaranteed.  
Send for Circulars with Prices.

**The National Pulley Covering Company,**

BOWLY'S WHARF and WOOD ST., - - BALTIMORE, MD.





# KNOWLES STEAM PUMP WORKS,

BUILDERS OF

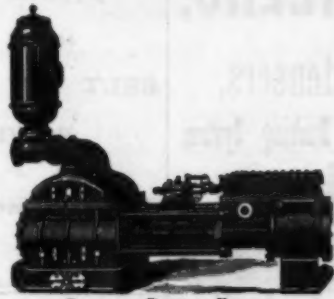
## Single and Duplex Steam and Power Pumping Machinery

113 FEDERAL ST.  
BOSTON.

93 LIBERTY ST.  
NEW YORK.



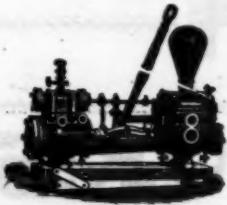
PUMP AND CONDENSER.



COMPOUND PUMPING ENGINE.



BOILER FEED PUMP.



FIRE PUMP.

SEND FOR  
ILLUSTRATED  
CATALOGUE,  
WITH  
Price-Lists.

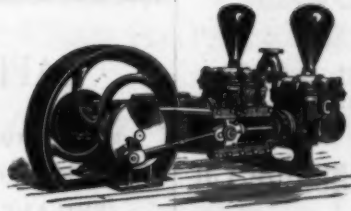
ESTIMATES  
FURNISHED  
—ON—  
APPLICATION.  
CORRESPONDENCE  
SOLICITED.



GEARED POWER PUMP.



DUPLEX BELT PUMP.



AIR COMPRESSOR.



FIRE PUMP.

### SOUTHERN SELLING AGENTS

CROOK, HORNER & CO.  
Baltimore, Md.

SHAW & DAVIN  
Birmingham, Ala.

HECKLENBURG IRON WORKS  
Charlotte, N. C.

VALE & MURDOCH  
Charleston, S. C.

E. V. WHITE & CO.  
Norfolk, Va.

Boston

Philadelphia

Chicago

St. Louis

### SOUTHERN SELLING AGENTS

H. SCHWARTZ  
New Orleans, La.

ATLANTA ENGINEERING CO.  
Atlanta, Ga.

KENTUCKY MACHINERY CO.  
Louisville, Ky.

W. H. PERRY  
Nashville, Tenn.

LIVERMORE FOUNDRY & MACH. CO.  
Memphis, Tenn.

San Francisco

## Worthington STEAM PUMPS

SEND FOR ILLUSTRATED CATALOGUE

HENRY R. WORTHINGTON  
NEW YORK

BUY "THE NEW SOUTH."

PRICE \$2.50.

HANDSOMELY BOUND IN CLOTH.

MANUFACTURERS RECORD CO., PUBLISHERS.

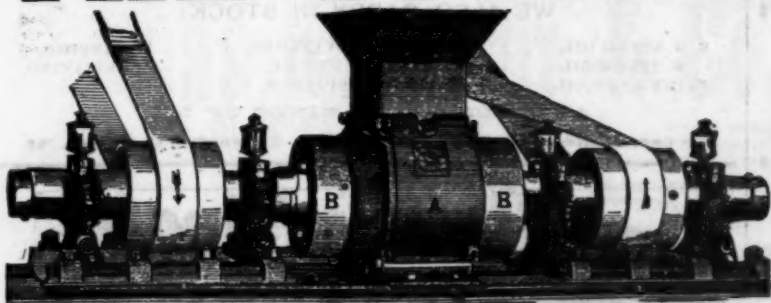
E. C. HUXLEY, Pres.

T. L. STURTEVANT, Treas.

## THE STURTEVANT MILL.

ROCK CRUSHER

—AND—  
PULVERIZER COMBINED.



FOR GRINDING AND CRUSHING  
Cores, Phosphates, and Other Hard Substances.

of this invention, as it is the first mill ever constructed where the rock is made to grind itself. The expense of wear and tear is 75 per cent. less than any machine ever invented. No skilled labor required. One mill equal to a 20-stamp battery and crushers combined, occupies space of 12 feet by 4 feet in width. These machines are in operation on a large scale. Every mill warranted to do all claimed for it. Send for catalogues of this wonderful machine and full information.

FRASER & CHALMERS, Sole Manufacturers,

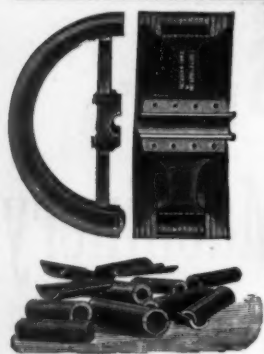
45 Fulton Street, Chicago.

2 Wall Street, New York.

11 Calle de Juarez, Chihuahua, Mexico.

423 Blake Street, Denver

STURTEVANT MILL CO., 89 MASON BUILDING, BOSTON, MASS.



# Wood Split Pulleys.



## MILBURN Gin & Machine Co.

MEMPHIS, TENN., U. S. A.

MANUFACTURERS OF

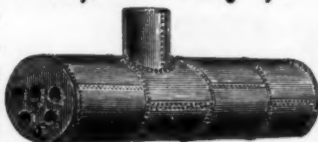
# STEAM ENGINES, BOILERS,

(Made by the Tweedle System of Hydraulic Riveting.)

## Cotton Gins, Gin Feeders and Condensers,

## And the Celebrated "MILBURN" Wood Split Pulley, with Bushing System.

The best and lightest Pulley made. Every one guaranteed. Send for catalogue, testimonials and price-lists. We have the largest works of the kind in the world. Will send one of our Wood Split Pulleys



to any responsible party, for thirty days' trial, free of charge, if it fails to meet our warranty.

## Milburn Gin & Machine Co.

Send for Illustrated Circular and Price-List.

## E. C. ATKINS & CO.

INDIANAPOLIS, IND.

MANUFACTURERS OF

MEMPHIS, TENN.

## Circular, Cross-Cut AND Band Saws.

### HAVE YOU A BAND MILL

Or Are You Going to Erect One?

### OUR BAND SAWS

Are winning the favor of Lumber Manufacturers for their excellent and uniform temper and for the quality of Steel we use in their manufacture.

—WRITE FOR PRICES.—

SPECIAL STEEL AND TEMPER

Use only the best Cross-Cuts. Our Cross-Cuts are acknowledged as incomparably the best in use. We are agents for Tanite Emery Wheels and Grinding Machinery.



## Chapman Valve Mfg. Co.

MANUFACTURERS OF

STEAM, GAS AND WATER

## Valves and Gates.

### Fire Hydrants

With or Without INDEPENDENT VALVES.

General Office and Works,

INDIAN ORCHARD, MASS.

Treasurer's Office,

Mason Building, 72 Kilby and 112 Milk Sts., Boston.

ALL WORK GUARANTEED.

Send for Descriptive Circulars and Price-List.

Correspondence Solicited.

## Stokes & Parrish Machine Co.

PASSENGER

AND

FREIGHT,

HYDRAULIC,

STEAM

AND

BELT

POWER.

HOISTING  
MACHINERY

FOR

MINES,

BLAST

FURNACES,

INCLINED

PLANES,

AND

DOCK USE.



# ELEVATORS

## SAFETY, SPEED AND ECONOMY.

WORKS AND OFFICE:

30th and Chestnut Sts.,  
PHILADELPHIA.

BRANCH OFFICE:

95 & 97 Liberty Street,  
NEW YORK.

## OILS for WOOLEN MILLS a Specialty.

Established 1832.

## WM. C. ROBINSON & SON,

MANUFACTURERS OF AND WHOLESALE DEALERS IN

# OILS!

217 (Old No. 81) South Street,

BALTIMORE.

ELAIN OIL. Always satisfactory. Will scour out perfectly in any water.

LANA OIL. A very good oil, but does not scour out as well as Elain in very hard water.

OVEJA OIL. The best Mineral Wool Oil made. Gives satisfaction to our trade who use it. Has a very good body, and scours well for a Mineral Oil.

WE ALSO CARRY IN STOCK:

B. W. SPERM OIL,  
W. SPERM OIL,  
PRIME LARD OIL,

COLOPHINE CYLINDER,  
COLOPHINE ENGINE,  
COLOPHINE SPINDLE,

PARAFFINE,  
LUBRICATING,

AND ALL OTHER KINDS OF OIL.

Correspondence Solicited and Samples Forwarded, if desired.

